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★ FEB 18 1929 ★

U. S. Department of Agriculture

137a
THE FARM FORUM

Friday, March 1, 1929.

NOT FOR PUBLICATION

Farm Engineering Meeting No. 7: Businesslike Roadbuilding.

SPEAKING TIME: 8-1/2 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! -- I knew this subject of road building would bring out the crowd today. We are putting a lot of money into roads these days, and we want them built right. Our Road Engineer is now going to talk to us, and tell about building roads in a business-like way --- Maybe he will tell us what kind of road is best to build ----- How about that, Mr. Engineer?---

When folks ask me what is the best type of pavement, I always say "there ain't no sich animal." The road should fit the traffic. The kind of surface needed on one road, might be an extravagance on some other road.

Why, even in the main systems of some States, the traffic is not so heavy it can't be supported by a sand-clay surface, the lowest type of road surfacing. Many roads need no surfacing better than gravel. Many others are adequately improved if they are surfaced with bituminous macadam.

However, the roads that serve the heaviest volume of traffic need to be hard-surfaced; they need to be paved with brick, or concrete, or sheet asphalt or asphaltic concrete so they will stand the pounding they get from the thousands of cars and trucks that run over them.

Careful experiments have shown that the cost of running an automobile varies according to the character of the surface over which it is driven. The harder and smoother the surface, the lower the operating cost. On unimproved roads you use the most gasoline and there is the hardest wear and tear on your machine and on your tires. On a road surfaced with gravel or sand-clay or macadam you use less gas and the wear and tear on your machine is less than on an unimproved road. On a smooth, hard-surfaced road, the least amount of gas is used and there is the least amount of wear and tear on the machine. The difference in the cost of operating a passenger automobile over an unimproved road and over a smooth hard-surfaced road is sometimes as high as 2-1/2 cents a mile.

Now when you multiply such a saving by the number of cars that use the roads in the course of the year, those little savings amount to surprisingly big totals. And remember, a penny saved is a penny earned.

3/1/29

I was telling a crowd this the other day, when somebody spoke up and wanted to know why, if the difference was so big, why I wasn't in favor of all the roads being hard surfaced.

Of course, that would be fine, but it would be very poor business. As I said, a penny saved is a penny earned. But if there are not enough machines using the road for the saving in gas and wear and tear on the machines to amount to more than the extra surfacing would cost, it would be poor business to put that kind of surface on the road. It is the earning-power of the road which should be taken into consideration in deciding the kind of surface it should have.

Let's say that in the course of a year a mile of paved road, costing \$35,000, carries 10,000 motor cars a day. It will earn in a year about \$90,000 in savings of the cars and fuel. That's a remarkably good investment. Cut down the traffic to 1,000 vehicles a day. The annual earning is still about twice the annual cost. But, here's the point, if you lay that same pavement on a road that carries only 400 cars a day, its annual earnings will not amount to as much as the annual cost. With that traffic that road will be a losing investment.

Now, there are thousands of miles of roads, even some in our main highway systems, that serve not over 400 cars a day. For such roads, paved surfaces are not justified. For many of them, the smaller savings made possible by a gravel surface will produce in a year more than that cheaper road surface costs. That being the case, the business-like engineer says that the gravel surface is best. There are many roads where the traffic does not justify any surface ----- (As if interrupted) How's that? --- How do we judge the traffic?

Why, we count the cars. You've all no doubt seen, at one time or another, young fellows at the cross-roads on main-highways, with pencil and pad in hand. Occasionally they halt drivers and ask "Whereya from and whereya going?"

Those boys are taking a traffic census. A traffic census is the first step in the business-like planning and improving of a modern road.

In all States, the State highway funds are now spent by competent highway departments under expert engineers. They designate definite systems of connected main highways for improvement, so that you taxpayers can know where your taxes will be spent. The more important routes of the State highway systems have been welded into the Federal-aid system on which the Federal funds are spent.

Those systems are planned to serve the needs of the most people, as shown by the traffic counts. In Maine, for instance, the principal road system includes 1,530 miles, on which an average of 1,044 motor cars travel each day. The other 21,474 miles of roads in the State serve an average of only 70 vehicles a day. In other words, the State's main highway systems, which include only seven per cent of the total road mileage, accomodate more than half of the entire movement of vehicles.

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Of course, you all know, the rate at which the highway system can be improved is fixed by the amount of money appropriated for that purpose. The first concern of the modern highway official is to see that enough is appropriated to keep up the roads already built.

The next problem of the highway official is to decide upon the order in which the various sections of the system shall be improved. In doing that, he is guided by the traffic maps prepared from the traffic census. Those maps show the order in which the roads should be improved according to their traffic importance.

There is always the fellow who wants his road improved first. The business-like road department, however, by the aid of its traffic census and traffic maps, can say with certainty which roads should be improved first. Business-like road building puts ^{first} things first, for the benefit of the whole people.

ANNOUNCEMENT: This time next week we will talk about calibrating the drills and planters. We must be getting the machines ready, now, for spring work. And all you poultrymen will want to be here Tuesday when we talk about growing healthy chicks. However, don't think those are the only meetings. We will have the usual livestock meeting on Monday, crop problems on Wednesday, and Thursday will be dairy day as usual.

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937a
THE FARM FORUM

(REGION 1)

Mon., March 4, 1929.

NOT FOR PUBLICATION

Livestock Meeting No. 23a: Meat Grading Benefits Producers.

ANNOUNCEMENT: The Farm Forum will be in order! --- As you all know the United States Department of Agriculture has worked out standard grades for livestock and meats. Just how those standards affect those of us who produce the meat is what we are going to hear about at this time. This specialist from the Department is going to tell us how meat grading benefits producers -----

Yes, the grading of meats will be a big benefit to you farmers.

Universal grade standards for meat will put you in a position so that you can readily understand what the market now demands.

In fact, standard grades and grade names for livestock and meat will do even more. Such standards will enable you to better read the future market for livestock. That is, they will make it possible for you to understand what the trade expects the future needs will be. Standard grades will enable you to adjust your livestock raising program so as to meet the demand in the way that will pay best.

In producing meat animals of any class, livestock farmers are under a handicap, you know. You have to prepare your products for a market which may be weeks, or months, or even years ahead. To know just the kind of product to produce for that coming market is a hard problem. One of the chief things which make it so uncertain is the always changing demand of the ultimate consumer, the retail buyer.

Consumers demands sometimes change and without much warning and at other times the demand changes slowly and you can see the change coming.

The trouble has been that the average consumer doesn't know much about meat. Of course, he knows a first-rate piece from a very bad piece of meat. But when it comes to drawing the line between the smaller differences in quality, he really does not know how to do it.

Without standardized grades and an official grade mark or stamp to guide him, he is easily imposed on. When that happens, you men who produce the meat may suffer.

For instance, an unscrupulous dealer buys low grade meat and sells it for high grade meat. In that way, he increases the apparent supply of high grade meat. As the general public lacks definite information about quality in meat, many consumers fall an easy prey to a crooked dealer. Such artificial inflation of the supply is bound to have a bad effect on producers of high grade meat animals. -----(As if interrupted) -----What's that? -----"How?" ----"How does the grading and stamping help the producer know about the demand?"

Well, you recall, the government meat grading service was started shortly after the World War to help improve buying of meat on contract. The buyer just ordered the meats according to government specification, and then the responsibility for seeing that the proper goods were delivered was placed largely on the official government meat grader. It was his duty to determine the grade of each piece and decide whether or not it was up to standard specification contained in the contract. That service was run on a fee basis. The cost, figured at a given rate per hour, was usually paid by the buyer. Well, that service has been expanded to include the grading of carcasses at the point of slaughter. And in the case of slaughterhouse carcasses, the official grader puts a ribbon-like stamp on the carcass in such a way as to show the grade of beef on practically each retail cut of the entire carcass.

Marked that way, it is easy for the consumer to buy his retail cut according to the grade and be sure he is getting the quality he is paying for. When consumers demand certain quality meat, that demand is reflected in the retailer's orders to the packer. In order to supply the retailer's demand, the packers' buyers must pass the demand on the producers..

You understand, the grades used are United States "standard grades". That is, each grade means the same thing no matter what the market. Those standard grades also furnish a common trade language between the consumer and the producer. They are doing away with that Babel of different grade names in the different markets.

That grading and stamping of meat carcasses is a means of transferring the ideas, and wishes, and desires of the consumer to producers. They enable you to get a quick, accurate understanding of the needs of the consumer. Knowing his needs, you can fit your program of livestock production to meet the demand.

When you know the market classes and grades of livestock and meats you are better able to carry on your operations on an intelligent basis. They give you a fair chance to know the general trend of the

market. That can prevent an over-supply of a certain grade which may be meeting a rather slow market.

Then, too, you livestock men should realize that a lot of things figure in livestock prices. It is not only the local supply and demand that sets the price. Outside and far off conditions play a very important part. The demand for certain types or grades from consumers changes the prices every day. Then, too, the marketing of the past affects prices. That is, if the meat was put in storage, that meat will have an affect on prices when it is put on the market.

Now then, the grading and stamping of that meat when it was put in storage would give a means of telling exactly the amount of that grade on hand. In that way, the producer would be selling his meat in competition with storage meat of a known instead of an unknown grade.

In other words, meat grading eliminates guess work. As a rule, when there is any guessing the buyer plays safe. It is the producer who suffers when there is any guessing to be done. Cutting out the guess work helps the producer.

ANNOUNCEMENT: Tomorrow the question before the Farm Forum will be growing chicks. Wednesday, we'll talk about lawn seeds and fertilizers. Thursday about preventing milk souring, and Friday our Farm Engineer will show us how to calibrate the drills and planters.

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U. S. Department of Agriculture

1937a
THE FARM FORUM

(Regions 2 and 3)

Monday, March 4, 1929.

NOT FOR PUBLICATION

Livestock Meeting No. 23:

Grading Beef on the Hoof

SPEAKING TIME: 8-1/2 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order.-- We have with us today the man with the X-ray eyes ----- Of course, he doesn't claim that. He says he's only a meat specialist from the U. S. Department of Agriculture. But he does claim he can grade a beef carcass by simply looking at the live steer --- If he can do that, I for one, would like to know how he does it -----

No, sir, Mr. Chairman -- I have no X-ray eyes. There's no hocus-pocus about this. Grading beef on the hoof is entirely possible. It is the logical thing to do. And, as a matter of fact, it is a common practice.

The live animal as it stands in the feed lot or stock yards has certain characteristics from which one can judge how it will grade as a beef carcass. From the very beginning of beef cattle marketing, it has been necessary to do just that thing.

The meat packing industry was forced to work out definite standards to guide it; because the demand from consumers was for beef carcasses of certain classes, and weights, and grades. Beef, as you know, is highly perishable. It must be handled under refrigeration. Cattle are often bought and slaughtered after the order for beef has been placed. For that reason, buyers of live animals at the markets must have in mind reasonably definite standards so they can visualize the different kinds of carcasses ordered by the beef trade. -----
(As if interrupted) ----- Yes? --- What is it? ----- "How?" -----

Well, the grading of beef on the hoof is done by comparing the characteristics of live animals with the characteristics of their carcasses, all the time keeping in mind the different grades.

All steers, for instance, are divided into seven grades. So in grading steers on the hoof, the grader has to keep in mind the seven grades of live steers and the seven grades of carcasses which correspond to them.

How does he do that? -- How can we tell the kind of carcass that is underneath the hide? -- What are the things which are common to both the carcass and the live animal? What are the things which form the basis for grade descriptions?

Well, there is the shape of the body or conformation. There is the fat or finish, and there is quality. With a true picture of those things clearly in mind, grading is merely a matter of recognizing those things and putting a true value on them.

To show how that is, let's take some of the most important characteristics of the choice and common grades of slaughter steers.

First, let's take the choice grade steer. The body of such a steer is rectangular with the sides slightly rounded. The lines of the back and chest, and the sides are nearly parallel, wide apart and almost straight. The shoulders, back, loin, and rump of a choice steer are broad, smooth, and very thickly fleshed. The thigh or lower part of the hindquarter is very thick and bulges at the side and rear. With that kind of body, you usually see a short wide head, a short thick neck and short legs.

All right, A very fat or well-finished steer is usually thick and plump over the back, and loin, and ribs and rump. A prominent brisket, full tongue root, a deep thick rear flank, a full cod, and plump, deep twist and prominent bunches of fat on either side of the tail head are also definite signs that the animal is finished.

Those signs of a large amount of fat, together with a smooth, firm, thick covering of flesh, indicate that the meat will be high quality. Those characteristics in a live slaughter steer are evidence that the animal is choice grade.

On the other hand, a common grade slaughter steer is very different from a choice steer in conformation, and finish, and quality.

The top and under lines as well as the side lines of the body of a common grade steer are very irregular. The shoulders and the back and the loin and the rump are very narrow and the bones are very prominent. The thigh is thin and flabby. The flank is high and thin, and the twist lacks depth and fullness to a very noticeable extent. Those things show that the muscles are thin, that there is very little fat, and that there is a high percentage of bone to flesh. They also show that the meat is low quality ----- (As if interrupted) How's that? ----- "How close can they come?" --- You mean how close can the man who grades the steer on the hoof come to the real grade of the carcass?

Well, in a test lot of 615 animals of different grades, a committee of three qualified judges recently graded each individual and its carcass separately. It was a sort of blind-fold test, for the committee had no knowledge of the grade of the live animal at the time they graded the carcasses. However, they put 87 per cent of the carcasses within one-third of the grade given the live animal and 98 per cent were placed within two-thirds of the live grading.

So you see the grade of the carcass can be determined very closely by looking at the live animal. Beef grading on the hoof is a logical procedure. When it is more clearly understood, it will tend to cut out some of the confusion which now exists among the producers and the trade.

No, the trouble is not in grading on the hoof accurately according to definite standards. The trouble is that both slaughter cattle and their carcasses are called by different names at different markets. For instance, what are considered medium grade steers at Chicago or Kansas City often are called choice grade steers at some of the smaller outlying markets.

That kind of thing causes confusion for the trade as well as for producers. You can't compare prices in order to determine the proper place to ship your finished cattle, because the grade names don't mean the same thing at the different markets.

For that and other reasons, the Bureau of Agricultural Economics has prepared standard grade descriptions. Those standard grade descriptions enable government market reports to give quotations accurately.

Standard grades for beef cattle, calves, and vealers have been published by the Bureau. Also standards for beef, veal, and calf carcasses. Tentative standards have been written for live slaughter lambs and ewes. Those standards and grade descriptions are being used for grading both beef and cattle.

When adopted generally, those standards will furnish a definite, uniform system in which the correlation between live animals and carcasses has been worked out. They will make more accurate and understandable the grading of animals on the hoof.

ANNOUNCEMENT: This time next week our Farm Forum will take up the question of swine sanitation. In the meantime, however, we have meetings every day this week except Saturday. Every meeting is important.

FEB 27 1929

Department of Agriculture

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In 37a
THE FARM FORUM

(Regions 4 and 5)

Monday, March 4, 1929.

NOT FOR PUBLICATION

Livestock Meeting No. 23:

The Meat Eater and the Cowman

SPEAKING TIME: 9 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! -- Today we have a market specialist of the United States Department of Agriculture. He is going to talk to us about the modern trend in beef production and how the folks back East changing their bill-of-fare has affected the cattle raising business here in the West. -- Let's have order! "-----

I want to compliment you cowmen. In giving consumers what they want, in quality and weight of beef, you are up in front among modern producers of food products. And you have found that it pays to give consumers what they want.

Most of you have culled out your poor type breeding stock. You have, in that way, raised the average quality of your foundation stock. By buying purebred bulls, bulls of thickmeated, early-maturing strains, many of you have developed steers suitable for market at 15 to 18 months of age; instead of at 30 to 36 months, as in the old days.

Some of you who are favorably situated, with high quality stock and an understocked range, are getting enough weight to sell Baby Beef feeder calves. In that way, you are getting an annual turnover and quicker profits.

Some of us in the Department of Agriculture feel that we can claim to have been your partners in making these improvements. Grade standards for cattle of different kinds have been in operation for some years in the various markets, but it was not until the Department set up definite national standards that people really began to understand the meaning of such standards and to see that they meant the same thing from western range to eastern market.

With standards for the different classes of cattle, it has become a simple matter to analyze a herd, and to place the cattle into their proper grades. Then by studying the market quotations, it is easy to see which are the paying kind and which don't pay so well. You couldn't do that before you had standard grades which in simple, common words stood for the same thing everywhere.

3/4/29

The old days, when ranchers produced merely numbers of head or gross pounds of weight and held steers for 3 or 4 years, are gone forever.

It was a hard blow to some of us. That independent life of the cowman on the range, when we could run cattle to suit our fancy, was hard to give up.

We finally found out that when we sent to market steers with hard fat and coarse frames and tough muscles, they encountered a changed market condition. It seemed as if all of a sudden we were in a new business. We found the customers were paying rich premiums for certain grades and cuts of beef, and furthermore, they were penalizing the qualities, weights, and cuts they didn't want.

Yes, that's about the size of it. As I said, in the beginning, cattlemen have always taken a lead in giving folks what they want. You are getting your reward. I congratulate you. And we in the Department of Agriculture are glad to have had a part, with our grade standards, and market news service, in bringing about the improvement.

But when you get down to it, neither of us changed any too soon. Fact is, the change was forced on us. It was the folks that eat the meat who were really responsible.

You see, about 15 years ago, many folks quit the old-time standard three square meals a day, with plenty of beef and pork and potatoes and cabbage. That was the time people began all this talk about calories and vitamins and dietitians, with doctors saying we ate too many pounds of food and not enough variety. It all sounded like poppycock to some of us hungry cowmen.

But that variety-of-food idea kept growing. It sounded like the death knell of bulk tonnage sales of ungraded food products of all kinds. And it was not only a question of variety-of-food, people began demanding more variety in other things or what they called a higher standard of living. Retail stores began offering more and more variety. The Consumers were picking and choosing what suited them, as long as they could buy it.

Well sir, the upshot of all that was that every product in every food line had to stand the competition of higher standards. Producers had to go in for better quality or get out of business.

Of course, you may not have realized it at the time -- many of us didn't -- but those changes in the preferences and requirements for beef really had much to do with the bottom dropping out of prices following 1920.

The chief reason we didn't change quicker to meet conditions was because we were out of touch with our market. The cattle business had been moving to the far west while the main body of consumers was still in the big industrial cities of the East. The cowman didn't realize that the food habits of the people of this country were really changing in a big, important way.

3/4/29

Then, in the beef business, we can't change as quickly as some other folks. Under the methods we were using back in 1920, it was a matter of three or four years from the beginning to the marketing of a fat steer. That being the case, we couldn't change fast enough not to get caught.

As you know, the professional cowman is out on his ranch a good part of the time. He markets once a year. And a good part of what he sells doesn't go to the man who eats the meat. It goes to the Corn Belt farmers for fattening.

Then, you remember how it was, when you came to market you found big changes in style, and weights, and quality demands were being made each year. And you were the ones who lost.

It took three or four years' experience. It took real financial punishment to make us realize that a large part of our after-the-war troubles were due to definite, permanent changes in consumer demand.

We blamed "general business conditions," too many cattle, the calling of cattle loans, and so on. All those things were there all right. But behind them was this change in the appetite of the consumer. The man who eats the meat was calling for lighter, choicer, juicier and more tasty cuts, in place of the fifteen cents a pound round steaks and twenty cent sirloins which came off the "export type" of weighty bullocks before the war.

That radical change in the markets was being mentioned by the trade papers, by the market news service and the research studies of the Bureau of Agricultural Economics and by the wide variations in prices paid in packers' purchases. Finally you cowmen interpreted the trend correctly. You went in for new and efficient methods. And I congratulate you on the results.

ANNOUNCEMENT: Tomorrow the Farm Forum will discuss the growing of healthy chicks. Wednesday is our crops and soils day, Thursday, will be the regular dairy meeting, and Friday we will have a demonstration on calibrating drills and planters.

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THE FARM FORUM

Tuesday, March 5, 1929.

NOT FOR PUBLICATION

Poultry Meeting No. 23:

Grow Healthy Chicks

ANNOUNCEMENT: The Farm Forum will be in order! -- We have a Poultry Expert from the United States Department of Agriculture with us today. He says we can and should grow healthier chicks. He is going to tell us how we can do it, and what it will mean to us if we do ----- Go ahead, Mr. Expert -----

Obviously, the fewer chicks that die, the more of them will grow up to pay for their feed and keep; with maybe something over for the keeper.

I guess you all realize that. Although most folks don't seem to realize how high actual chick losses from disease and other causes are. Most of you probably lose more chicks than you realize.

The immediate saving of chick losses is not the biggest reason for growing healthy chicks, however. Great as the possibilities are along that line, they don't mean as much in dollars and cents as the bigger earnings of better-grown pullets. Healthy chicks mean better grown pullets. And better grown pullets lay more eggs. More eggs mean more money.

--- Oh, yes, There's no question about that egg laying. For instance, a survey in Connecticut has shown that there is a decided increase in egg production when a grow-healthy-chick program is followed consistently.

By a "grow-healthy-chick program" I mean growing clean chicks in clean houses and on clean ground. In Connecticut, they used what is called an "8-point-program."

Here are the eight points: First, clean chicks; second, clean incubators; third, clean brooder houses; fourth, clean ground; fifth, clean litters; sixth, clean feed; seventh, clean management; and eighth, clean laying houses ----- (As if interrupted) ----- What's that? --- "What do I mean by 'clean management?'" --

I mean by that taking every possible precaution to avoid bringing in disease from the outside. The most dangerous source of infection for the young chicks is the old stock on the farm. Diseases such as worm infestation and coccidiosis can be easily carried from the old stock on the feet, or on shovels

and does, or on any material or equipment carried from one place to another.

The best thing is not to use the same equipment for the young and old stock. When the young stock is on range, keep any visitors off the range. And if you locate the water dishes and feed boxes at the fence line, you can cut down the number of trips you have to make on to the range yourself -----
(As if interrupted) ----- Now then, what was your question, over here? ---
"Clean chicks?"

Why, clean chicks means getting the chicks or the hatching eggs from tested flocks. As far as we know, there is just one disease which can be traced directly from the hen to the chick by way of the egg. That very important disease can be detected by a test. Clean chicks are chicks from flocks which have been tested and from which all the birds showing signs of the disease at the test have been taken out of the flock and marketed.

Of course, you all know ----- (As if interrupted) Beg pardon, did you have another question? --- "How often?"

You want to know how often to change the litter? Is that it?

Well, clean at the end of the first ten days. Then each five days after that for eight weeks. However, you may find it more convenient and easier to keep track of the cleaning days, if you clean at the end of the first week, and twice a week after that. Then you can use the same cleaning days each week.

You'll find planer shavings make the best litter. Of course, you can use ^{cut}oat straw, but it is not so good as planer shavings. Planer shavings are clean and light. When the litter is scratched about and run over by the chicks, the havings being light, come to the top --- However, be sure to feed the chicks as soon as you put them in the brooder house or they may start eating shavings.

Keeping the chicks in and cleaning often is a first-rate way to keep down that disease known as coccidiosis. And when you first let the chicks out, let them run in a narrow fan-shaped yard. Fix it so you can move the fence every five days. In that way you see, you can move the fence so as to make five little yards out of your narrow fan-shaped yard. Then use the little yards in rotation. After the chicks have had five days in each of those little yards, you can let them run free.

The ground you let them out on, however, should be clean ground. We consider ground "clean" for the purpose of raising chicks when no chicks have been allowed to run on that ground for at least a year, and when no poultry manure has been spread on it during that time. Land which has been used, should be cultivated, cropped, and re-seeded.

The ideal system is to have three or four separate ranges you can use in a three- or four-year rotation. That gives time to establish a good sod. Clover range is better than grass range and alfalfa range is better than clover.

3/5/29

And, of course, as we said, the houses should be clean. A thorough cleaning of brooder houses is one of the most important steps in raising chicks. Of course, clean the houses before you move them to new ground. First, take out the roosts and all movable equipment. Clean them outside the house. Then carefully brush down the ceiling and walls of the house inside and out. Clean the floor thoroughly. By thoroughly, I mean scrub the lower parts of the walls and floors well with a brush or broom and water with concentrated lye in it.

Spray the whole inside of the house with bichloride of mercury, using one ounce to eight gallons of water. Let that dry, and then whitewash the whole inside.

Clean and disinfect all the equipment. Don't forget the door sills, and the ends of the skids under the house, or any other projecting part where dirt and germs may be lurking.

Before you get as far as the brooder house, however, remember the incubators also need thorough scrubbing and disinfecting. Cleaning is even more important than disinfecting. If you use burlap in the nursery trays, put in new burlap for each hatch.

I'd advise you to get that Farmers' Bulletin No. 1538-F on the incubation and brooding of chicks.

I know, it sounds like a lot to do. Sanitation is no simple matter, but it is a paying proposition. Clean, well-grown, well-housed pullets are the best possible guaranty for a year of high egg production. And the main thing is to start them right.

ANNOUNCEMENT: The number of that Bulletin is Farmers' Bulletin No. 1538-F, The title is "Incubation and Brooding of Chicks." You can get it free of charge by just dropping a line to Radio Station _____, or by writing direct to the United States Department of Agriculture at Washington.

U. S. D. A.
BUREAU OF BIRD INDUSTRY

1.9
In 37a
THE FARM FORUM

(Regions 1 and 2)

Wednesday, March 6, 1929.

Crops and Soils Meeting No. 23a: Lawn Seeds and Fertilizers.

Speaking Time: 9 Minutes.

ANNOUNCEMENT: The Farm Forum will be in order! --- If any of you men have any questions about lawns, come on down here to the front seats, so you can be sure to be heard --- We have a lawn expert from the U. S. Department of Agriculture. Now if any of you have anything to ask about lawn seeds or lawn fertilizers, just fire away ----- Ah, here's one now ---- All right, Mr. Expert, I'll just leave it to you to answer that question.

--ooOoo--

You say you have had trouble growing grass in the shade? -- You want to know what grass to sow, is that it? ----

Well, for shady conditions there are no turf grasses better than the rough-stalked meadow grass, Poa trivialis, and red fescue. That rough-stalked meadow grass seems to do well in the shade of buildings. The red fescue often seems to give better results under the shade of trees ---- (As if interrupted) "What proportions?" ----

Well, to meet the different soil conditions a mixture of equal parts Poa trivialis and red fescue may be used. Now, for lawns that are partially shaded and partially exposed to sunlight, you need a little different mixture. A good mixture for the shade-and-sun lawn is three parts Kentucky bluegrass, three parts red fescue, three parts Poa trivialis and one part redbot.

Did you get that? -- Let me repeat. Three parts Kentucky bluegrass, three parts red fescue, three parts Poa trivialis and one part redbot. That is for lawns partly shaded, partly exposed to sunlight.

Understand, in establishing a lawn a great deal depends on the selection of a grass or mixture of grasses suited to the particular soil conditions. And, in general, you can get the best results where you buy the grasses you want separately and mix them in the proper proportions yourself. The mixtures offered by reliable seedmen are usually made up of good quality seed, but they must necessarily be made for a wide-range of conditions. Those commercial mixtures may not be as well suited for your individual lawn, as a mixture you can make at home; provided you know the condition of your soil.

Here in the northern half of the United States, there is no grass better than Kentucky bluegrass, for fertile soils that are alkaline in reaction. In such soils, Kentucky bluegrass should make up the bulk of the mixture --- (As if interrupted) What say? -- "What would I mix with it?"

Four parts Kentucky bluegrass, one part recleaned redtop and one-fourth part white clover make a good mixture. If you don't want the clover, you might just leave it out, but it is likely to come in voluntarily where conditions are right for it.

For acid soils nothing beats one of the bent grasses, such as Rhode Island bent, or Prince Edward Island bent, or South German bent, or seaside bent. The objection to using bent grass seed is that they are rather high in price. If the price is a factor and you are satisfied with a turf that is not quite so fine, you can use a mixture of about equal parts of one of the bent grasses and redtop. And, if the soil is sandy as well as acid, then I'd advise you to use a mixture of about equal parts Rhode Island bent, red fescue, and redtop. --- (As if interrupted) What? -- "Fertilizer?"

Of course, there is no one fertilizer treatment that can be depended on to give good results with all turf grasses and under all soil conditions. The fertilizer as well as the grass has to be suited to the soil. Nitrogen is the most effective of all plant foods in stimulating a vigorous growth of grass. Where mixed fertilizers are used, nitrogen should make up a large part of the mixture. In many cases, the soil already has enough of the other plant foods to supply the grass for quite a while. In that case, nitrogenous fertilizers may be all you need, though an occasional application of a complete fertilizer would no doubt help.

Now for such grasses as bent grasses and fescues, that thrive in acid soils, ammonium sulphate or cotton seed meal alone, or mixed in the proportion of one part ammonium sulphate to three parts cotton seed meal, have given good results.

Put the ammonium sulphate on at the rate of two or three pounds to 1,000 square feet and water it in immediately so as to avoid burning the grass. Put the cottonseed meal on at the rate of 15 pounds to 1,000 square feet. And the mixture of ammonium sulphate and cottonseed meal should be applied at the rate of 10 to 12 pounds to the 1,000 square feet. ---- (As if interrupted) Yes? ---

Yes, that's true. Kentucky bluegrass needs a fertile soil that is well supplied with lime, for best results.

Bone meal worked into the soil at the rate of 25 pounds to 1,000 square feet before the seed is sown is usually beneficial. Bone meal can also be used as a top-dressing, but quicker acting fertilizers are preferable. When used as a top-dressing bone meal should be applied in the fall or late winter.

In some cases, lime worked into the soil before the seed is sown stimulates the grass perceptibly, but as a rule it isn't very effective when used as a top-dressing.

Don't get the idea, however, that where lime is used on bluegrass you don't need fertilizers. Whether lime is used as a top-dressing or worked into the soil before the seed is sown, you should make the regular seasonal application of fertilizer.

Continued application of ammonium sulphate, especially on soils that are already slightly acid, is likely to cause a condition unsuited to blue grass. Nitrate of soda tends to decrease the acidity of the soil. Therefore on certain soils nitrate of soda may be better for fertilizing Kentucky bluegrass than sulfate of ammonia.

A mixture made up of one part nitrate soda, one part sulphate of ammonia, and three parts cotton seed meal is also good. Put that mixture on at the rate of 8 pounds to 1,000 square feet. On soils already well supplied with lime, ammonium sulphate has been used quite satisfactorily. Normal applications change the reaction of such soils very slowly, especially where the water used in sprinkling carries lime in solution.

When you can't get those fertilizers readily, you might use commercial fertilizers with a high percentage of nitrogen to advantage. --- (As if interrupted) Yes? --- "When"? -- When should the fertilizer be put on?"

Well, the first top dressing of fertilizer should be put on in the spring, about the time the grass starts to grow. Then two other applications should be made at intervals of six to eight weeks. During hot weather, just put on about half as much as we suggested.

---ooOoo---

ANNOUNCEMENT: Tomorrow is our dairy day. We will have a man here to tell us how to cool milk. Some of us think we know, but it sours on us just the same. Friday, our farm engineer will be around to show us how to calibrate drills and planters. Then Monday all you men who raise hogs want to be on hand to get a few pointers on swine sanitation.

★ MAR 1 1929 ★

U. S. Department of Agriculture

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THE FARM FORUM

Region 3

Wednesday, March 6, 1929.

NOT FOR PUBLICATION

Crops and Soils Meeting No. 23b: Cotton Disease Control

ANNOUNCEMENT: Members will please find seat! -- It is time for our meeting to begin -- Order in the Farm Forum, please! -- We have with us a cotton disease expert. He is from the U. S. Department of Agriculture. We have asked him to tell about all the cotton diseases and how to control ----- All right, Mr. Cotton-Doctor, tell us all about it -----

No, that's too big an order, Mr. Chairman. There are too many cotton diseases doing damage in the Cotton Belt.

All we can do here is hit the high spots. And tell about the most important.

What would you have me start with? -- Have any of you ----- (As if interrupted) "Wilt" the gentleman on the right suggests.

I will. -- In trying to keep down wilt, please bear in mind these things:

First, if cotton wilt is unusually prevalent in your section, select varieties of cotton which are resistant to the wilt disease.

Second, grow wilt-resistant cotton in a system of rotation that can be adapted in your locality.

And Third, fertilize the cotton plants liberally with high-grade well balanced fertilizers. And keep enough vegetable matter in the soil. You can do that by adding manure or by plowing under such cover crops as rye, or vetch, or cowpeas, or soy beans.

Having plenty of plant food where the plants can get it, will increase the resistance of the cotton plant to wilt and many other diseases --- (As if interrupted) What's that? -- "What varieties?"

Why, wilt-resistant varieties, adapted to local conditions, have been developed by the States. I'd advise you to apply to your State Experiment Station for information on suitable varieties and sources of seed supply. They could tell you those things better than I can.

Wilt is caused by a fungus which gets into the roots of the plant in the soil. It grows and produces poisons in the plant tissue which finally accumulate and cause ~~that~~ wilting. I guess you all know wilt when you see it. The wilt-infected plants looked dwarfed rather early in the season. And some of you call it "black rot" because sections of the stems and roots turn black.

However, "black rot" or wilt, is probably the most important cotton disease in the United States. It is in many soils from Virginia to New Mexico and, taken as a whole, causes bigger annual loss than any other cotton disease.

Now, in the Southwestern States the most important cotton disease is the Texas root-rot. It causes sudden wilting and death of cotton plants, especially during warm spells just after rainy weather in the middle or late in summer. The roots of plants attacked by root rot are covered with a whitish mold which later becomes yellowish brown.

The trouble is, the Texas root rot attacks a lot of other plants in addition to cotton. It attacks legumes, a good many weeds, and ornamental plants, and some of the deciduous trees. Because it lives on so many plants no really satisfactory way of controlling it has yet been worked out. It doesn't seem to attack grain crops. And where it is especially bad a two, or, better still, a a three year rotation with grain crops, combined with clean culture as soon as the grain is harvested has cut down the disease somewhat. -----(As if interrupted) Yes? ----- Did you there on the fourth row have a question? --- "How about the pink boll rot?"

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Yes, that's common. Pink boll rot or anthracnose, as we call it, occurs in many localities where cotton grows rank and where it rains often.

As the name implies, it is primarily a disease of the bolls. However, it may attack leaves, or stems or bracts. And it is often responsible for poor stands on account of infected seedlings.

In fact, we have found that anthracnose is largely spread through planting infected seed. That being the case, the way to control is to plant seed which is not infected. To do that, you should get your planting seed from sections where there is the least anthracnose and where they use disease-free seed on land which is properly rotated.

Bacterial blight is another widespread disease which lives over winter in or on the cotton seed. And, of course, the way to control bacterial blight also involves the use of disease-free seed. Those bacterial blight-free seed can be gotten from sections where bacterial blight doesn't occur or from the parts of the field least affected by the disease. Pedigreed seed of unusual value is often treated with sulphuric acid or mercuric chloride to free it from disease germs. But, as a general farm practice, I wouldn't advise seed treatment for cotton disease control.

Another important cotton trouble, especially on the poorer soils, is what is known as "rust" or "potash hunger." It is noticeable about the middle of August. It causes the leaves to get yellow, then reddish-brown, and finally

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to drop off and leave the stalks bare. Such plants as that don't set a top crop, as a rule, and the yield is seriously cut down.

Poorly drained land, lack of vegetable matter and available potash lead to the development of that "rust." So, you see, the way to reduce the damage is to rotate the crops so as to keep enough organic matter in the soil. You can do that by plowing under such green manure crops as rye or vetch or cowpeas or winter peas^{or} by adding plenty of manure. Potash-combining fertilizers have also been used effectively.

And, as I said, there are many other cotton diseases. Taken all in all, they do a lot of damage. In fact, year before last, the combined attacks of plant diseases caused a loss of over two million bales of cotton in this country. Of course, the losses vary considerably from year to year according to the weather, and the type of soil, and the matter of soil fertility and rotation practices. And while we may not be able to control some of the conditions, such as weather, we can do much in fertilizing the soil and rotating the crops to keep down these troubles.

ANNOUNCEMENT: Tomorrow's meeting of the Farm Forum will be to take up the question of cutting down the losses from sour milk this coming summer. Friday, the Farm Engineer will be here to demonstrate to us how to calibrate the drills and planters, and next Monday, our hog raisers may get some pointers on how to increase profits through healthier hogs.

R. R. F.

★ MAR 1 1929 ★
U. S. Department of Agriculture

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THE FARM FORUM

(Region 4)

Wednesday, March 6, 1929

Crops and Soils Meeting No. 23c:

Good Seed Potatoes.

ANNOUNCEMENT: The Farm Forum will be in order! -- We have with us today a potato expert from the U.S. Department of Agriculture. He is going to tell us how and where to get good seed potatoes. -- Now, if you potato men will settle down and be quiet -- I'll just turn the meeting over to this Department man -----

The first question before the meeting today is: What is a good seed potato? ---

Just a moment --- don't all of you answer at once -- I know some of you will say one thing and some another. -- However, I guess we will all agree that it takes a healthy, vigorous, productive potato plant to produce a good seed potato.

Admitting that much, the next question is: How can you be sure of getting seed from that sort of plant?

My answer to that is: Buy only certified seed.

The term "certified seed potatoes", you know, signifies that the plants producing the seed stock have been inspected. They have been inspected by some regularly designated official who acts for the state seed certification agency, or other organization, vested with authority to inspect all potato acreage where the growers apply for the inspection. That service is now offered in practically every seed-producing state and every Canadian province.-----
(As if interrupted) What's that? --- "How do they inspect them?"

Well, most seed certification services require two field and one bin inspection. If the plants are free enough from disease and are vigorous enough and productive enough, they pass the field inspections.

Then there is the bin inspection of the potatoes from those plants. At the bin inspection, the seed potatoes must show not more than a certain small percentage of rhizoctonia or scab or late blight infection. Then, too, the potatoes have to be reasonably free from mechanical injuries such as might cause decay to set up and bring on losses when they are used for seed, or involve unnecessary waste in cutting.

But, if the potatoes pass the two field and one bin inspections, they are certified. The grower is furnished an official seed certification tag to put on each sack or other container used in shipping. Those certified seed command considerable premium over ordinary uncertified seed stock ---
(As if interrupted) Beg pardon -- Did you have a question ----- "Fake tags" you say?

I'm glad you mentioned that. I know that has happened. Some crooked dealers have tried to get the higher price just that way. They have stuck tags on uncertified seed saying the contents of the container had been inspected or certified.

In some of those cases, if there has been any inspection it has been by the grower himself. And if you read the printed matter carefully you may find the tag shows that the word certified refers to car inspection for table quality.

In advising you to buy certified seed, I'm warning you right now to examine the seed certification tags carefully. Make sure they are not fakes.

And, another thing, if a dealer tries to sell you what he claims to be certified seed but which do not have seed certification tags, you have no way of knowing whether he is telling the truth or not. Insist on the tag and read the tag carefully.

When you can buy seed stock carrying an official seed certification tag at an advance of from fifty cents to a dollar a hundredweight, it is usually a much better buy than uncertified seed at table market prices. Not only that, but certification is the only assurance you can ordinarily have of the quality of seed stock. ---(As if interrupted) What's that? --- "What's the difference?" ---- You mean what's the difference in yield between certified and uncertified seed? ---

That's been tested pretty thoroughly. There have been more than 11,000 comparisons between certified and uncertified seed made in this country and Canada. Those tests show a big margin in favor of certified seed. In fact, the average increase in favor of certified seed, as shown by those tests, is about 46 bushels to the acre. ----- (As if interrupted) Yes? --- Oh, I see ----

Yes, that's true. There is even a lot of difference between honest-to-goodness certified seed. If you are looking for super-seed stock you have to go one step further than mere certified seed. You must satisfy yourself that you are getting a high yielding strain.

Some years ago, the United States Department of Agriculture and some of the northern State Agricultural Experiment Stations made a variety strain test of five varieties. They grew several strains of Irish Cobbler, and Triumph, and Early Ohio, and Green Mountain, and Rural New Yorker in rows next each other to find out which were best. Practically all the seed used was certified seed, but, as it turned out, there was a lot of difference between different strains as to amount of disease and the size of the yield.

In fact, in two of the varieties, the Triumph and the Green Mountain, there was one hundred bushels difference between the highest yielding strain and the lowest yielding strain. But such differences as that are not generally obtained between strains of certified potatoes ---- (As if interrupted) "Where?"

Well, if you want to know where you can buy certified seed, I'd advise you to write to the chief seed certification inspector in the state, if you have such an officer in your state. Ask him to give you information about the addresses of the growers he thinks have the best seed.

If you can't get that information, next best thing to do is to write to the director of the State Agricultural Experiment Station of the State from which you want to buy your seed stock.

As a rule, you'll get prompt attention and dependable information that way. In many localities, the demand for certified seed hasn't become insistent enough yet. For that reason, many local dealers are not willing to pay extra for certified seed and take a chance on selling them in competition with another local dealer handling ordinary stock.

However, once you growers refuse to buy anything but certified seed, your dealers will soon see the light. They will soon see to it that your wants in the way of potato seed are met.

You may select the best soil, you may plow and prepare the land thoroughly, you may provide all the needed fertilizers, and use only the best tillage practices, and spray as intelligently as possible --- I say, you may do all those things and still fail to get a good yield if you neglect to plant high quality seed.

ANNOUNCEMENT: Tomorrow at this time, our Farm Forum will be open for a discussion about prevention of sour milk. Friday, we'll have the Farm Engineer here to tell us how to calibrate the drills and planters so as to plant just the right amount. Monday we start our next week's meeting with a few pointers on swine sanitation.

★ FEB 27 1929 ★

U. S. Department of Agriculture

1.9 In 37a
THE FARM FORUM

(Region 5)

Wednesday, March 6, 1929.

Crops and Soils Meeting No. 23d:

Tomato Disease Control

Speaking Time: 7½ minutes.

ANNOUNCEMENT: The Farm Forum will be in order! -- Tomato growers to the front, please! --- The Plant Doctor is here -- He is going to tell us what's troubling tomatoes -- and tell us a few things we can do to prevent some of the losses we've had this last season and the season before ----- All right, Doctor! -----

As tomato growers, I guess you men want to know how to prevent or control tomato diseases.

Let's start with tomato yellows.

Tomato yellows, experiments by the U.S. Department of Agriculture show, can be cut down 50 per cent or more by shading the plants. Older plants show 30 to 50 per cent less yellows than younger plants.

To keep down the tomato yellows, plant your tomatoes as early as possible and shade them until about the end of June. --- (As if interrupted) How's that? -- "How would I shade them?"

Why, you can shade them either with another tall plant or with special muslin tents. Plants like the sunflower planted on the west side of the tomato rows make good shade although the tents can be used over and over for several years, they are expensive. It is only where the danger of yellows is very great and where tomatoes bring high prices that the use of tents pays.

Some of the dwarf varieties are more resistant than standard varieties. However, none are resistant enough to stand a severe outbreak of yellows.

Tomato yellows is caused by the same virus which causes curly-top of sugar beets. It is carried to tomatoes by the beet leafhopper. In some years, tomato yellows destroys fully 100 per cent of the tomato crop in some of our dry sections in the Pacific Coast States. It doesn't seem to amount to much in the humid section along the ocean. And it is practically unknown east of the Rocky Mountains.

That's the way it is with many tomato diseases. They do a lot of damage in some climates, but don't seem to be able to thrive at all in others. Some of the serious tomato diseases of the eastern United States, such as leaf spots of all kinds and nailhead spot of the tomato itself, have to have

plenty of moisture to develop. They are not among our troubles out here on the Pacific Coast. On the other hand, we have some out here, such as yellows, which cut no figure back East.

However, some tomato diseases are quite widespread and general. For instance, Fusarium wilt is common to both the Atlantic and Pacific Coasts. It is one of our worst diseases. It is caused by a fungus which, once it gets into the soil, lives there and makes its way into the tomato plants. And when it does --- well, that's just too bad! We have yet to find a soil treatment that will work effectively against fusarium wilt. And, of course, no sprays can get at it inside the plant tissues.

There is just one way to dodge Fusarium wilt. That is by using resistant varieties. The best of these is Norton, which was developed by the U. S. Department of Agriculture. Other varieties have been developed by experiment stations for local uses. But none of them can beat Norton in ability to withstand Fusarium wilt on the Pacific Coast.

Then there is another form of tomato wilt, called Verticillium wilt. It affects the plant in much the same way as the Fusarium wilt does. But it is a bigger menace to the grower in the cooler coastal sections of the Far West than Fusarium wilt. It is not limited to tomatoes. It can go over to potatoes and other truck crops. It can even go over to ornamental plants and some fruit trees. And as yet we have discovered no variety which is resistant to it. The only control worth while is to avoid using infested land. -----(As if interrupted) What's that? ---- "Late blight?"

Yes, late blight of tomatoes is a very destructive disease, too. There is no question about that. But here on the Pacific Coast it is not very important, except in the case of the late shipping crop when colder, damper weather comes on.

However, although destructive outbreaks of late blight don't happen every year, many growers find it pays to protect their crops from possible losses by spraying or dusting regularly every seven to ten days during the growing period.

Some use Bordeaux mixture and others prefer copper dusts. Nobody knows definitely which is best. With either, the idea is to cover all the foliage completely. That may take six or seven applications.

Another disease I might mention is the non-parasitic Blossom-end rot. It occurs when there is lack of moisture at a certain stage in the growth of the tomato plant. You can recognize it by a dry, leathery, brown spot of varied size at the blossom end of the tomato. Sometimes the entire blossom end is affected. The best way to avoid that in irrigated sections, is to keep an even supply of moisture throughout the season.

Of course, there are a number of other diseases of tomatoes. There are others carried in the juice of the plant, as is tomato yellows. There are some caused by parasites, and some are non parasitic.

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Some, such as sand blast, seem to be carried in the seed. The only way to control this is by using seed from perfect fruits.

Good seed of wilt resistant varieties planted in soil free from infection and protected from disease carrying insects will result in lower losses from most of the **important tomato** troubles.

ANNOUNCEMENT: Tomorrow we will take up this question of preventing losses during the coming summer from sour milk. Friday, we will have our Farm Engineer on hand to give a demonstration of how to calibrate drills and planters. Then all you hog men want to be on hand Monday because we'll have another expert here to tell us how to turn more pigs into pork.

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★ FEB 23 1929 ★

U. S. Department of Agriculture
Thur. March 7, 1929.

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In 37a
THE FARM FORUM

NOT FOR PUBLICATION

Dairy Meeting No. 23: Be Careful About Cooling Milk.

ANNOUNCEMENT: Order in the Farm Forum! ---You dairymen find seats! --
This is especially for you men who have had trouble from milk spoiling --
This Market Milk Specialist from the U.S. Department of Agriculture
has a word of warning for you --- He says you want to be careful about
cooling milk -- but I'll let him tell you what he says. -----

I hope you all will have less trouble from milk spoiling
this spring and summer than ever before.

A lot of that trouble is unnecessary.

I have three things for to keep in mind. If you keep
these three things in mind, and do them, you can prevent much of
your trouble from spoilage.

First: Cool the milk. Second: Cool it quickly. Third; Keep
it cool.

If every dairyman in this country would do that we would
avoid an enormous waste which results every year from sour milk.

Remember, bacteria grow fast in warm milk. ----- Oh, yes,
I know you say you produce clean milk. I hope you do. You can't be too
careful. Of course, you should sterilize all utensils. Everything connected
with the handling of milk should be clean and sanitary. But no matter
how carefully milk is produced, it will spoil in a fairly short time;
if it is not properly cooled.

Let me just ask a few questions here. You on the end of the
second row there --- How do you keep your milk cool?

What say? ---"In a tank fed by a spring?" ----- How cold is that
spring water? ---"Cold as ice?" ---Are you sure of that? --- Spring
water will often fool you. It is seldom as cool as it is thought to
be. I've seen so-called "ice-cold" spring water with a temperature
as high as 65 degrees. In cooling milk, don't just guess at the
temperature. Have a good thermometer handy, and use it.

And sometimes spring water is warmed as much as 20 degrees just in flowing from the spring to the milk tank. Spring water should always be carried to the cooling tank in a pipe laid several feet under ground. And, of course, unless the spring is protected from the direct rays of the sun, and from surface drainage, the water is raised several degrees in temperature at the spring.

However, that's a good idea to keep the milk in tanks where the water can flow in and around the milk cans and out again. When you have to pump water, you should let the water you pump for the livestock flow through the milk-cooling tank first. Let the water come in at the bottom of the tank, and flow out at the overflow near the top into the stock tank -----(As if interrupted) What say? ----- "Suppose you don't have running water?" Well, when you don't have either ice or running water, you can use a tank and change the water often. The tank, in that case, should hold from six to ten gallons of water for each gallon of milk to be cooled and stored.

Of course, the use of ice is the best way to cool milk and cream and keep it cool. But even if you don't have ice, you can make the best use of the water you have.

Now, as I said, you not only want to keep your milk cool, but you want to cool it down quickly. Water at a temperature of from 50 to 60 degrees is available for cooling on most dairy farms. In order to get the quickest and best results, however, you should use a surface cooler.

Precooling or passing the milk over a surface cooler before the cans are put in the cooling tank, not only lowers the temperature of the milk more quickly, but, where ice is used in the tank, it saves ice. When cold running water is to be had, the temperature of warm milk can be lowered 30 to 35 degrees or to within 2 or 3 degrees of the temperature of the water. -----(As if interrupted) How's that? "How much water?"

When you are using a surface cooler with running water under average conditions, from 10 to 15 gallons of water should be enough to bring the temperature of each gallon of warm milk down to within 3 degrees of the temperature of the water when it enters the cooler.

The warmer the water you use, the more ice you will need. In cooling 10 gallons of milk, you can save 5 pounds of ice by using water at 50 degrees instead of at 60. By using water at 50 instead of 70 degrees, you can save 10 pounds of ice.

Now then, when you have to deliver the morning's milk shortly after milking it is necessary to cool the milk quickly to 50 degrees or below. In that case, you should use ice water in the surface cooler if you can. Spring or well water is seldom cold enough to cool milk below 50.

Of course, in the case of the night's milk, when you have more time, it is a good idea to cool to within 2 or 3 degrees of the temperature of the spring or well water by means of a surface cooler. Then put the cans of milk in a tank of ice water, or the coldest water available, until time for delivery.

Understand, to get satisfactory results with a surface cooler you must use care. Coolers should be washed and sterilized very carefully and also protected from dust. Otherwise, they will defeat the very purpose for which the surface cooler is designed.

After the milk has been run over the cooler, you set the cans in the storage tank filled with ice water, or the coldest water available. Tanks can be built out of insulated concrete, or wood, or plain concrete or metal.

And no matter what kind you build, you want to fix it so the water will always be as high on the outside of the can as the milk is on the inside. The tank should have an adjustable overflow pipe and also a drainage outlet at the bottom; so that the water can be let out when you want to clean the tank.

Narrow strips on the bottom on which to set the can should be provided so the water will circulate under the cans as well as around them.

Some tanks are too big and others are too small for the quantity of milk to be cooled. Those that are ^{too} big waste ice, while those that are too small don't permit the use of enough ice to cool the milk properly.

It's true, the quantity of milk produced on the farm varies from year to year and season to season. You can get around that, however, by building the tank in two parts; one part twice as big as the other. The bigger section should hold enough water to cool the ordinary production of milk. Then you can use the other section when production increases. But all these things are told about in Farmers' Bulletin 976-F. Why don't you write for that? It is called "Cooling Milk and Cream on the Farm."

ANNOUNCEMENT: Did you all get the number of that bulletin. It is number 976-F. and is called "Cooling Milk and Cream on the Farm!" You can get it free of charge by writing to Radio Station or by writing direct to the U.S. Department of Agriculture for it.

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★ FEB 26 1929 ★

U. S. Department of Agriculture

Fri. March 8, 1929.

THE FARM FORUM

NOT FOR PUBLICATION

Farm Engineering, Meeting No. 8: Calibration of Drills and Planters.

SPEAKING TIME: 8 Minutes

ANNOUNCEMENT: The Farm Forum will be in order! --- Come on, gather around this grain drill --- Our Farm Engineer is going to show us a few things about it.-- What was it you were going to talk about, Mr. Engineer? ---- "Cali-who-shun?" --- No, calibration, that's the word.----- What do you mean by calibration, anyway? -----

Why, calibration is nothing more than testing the machine, to find out how many seed it sows to the acre, at different adjustments. The object of calibrating a drill or a planter is to find out, before you go into the field with it, how the machine should be set to give just the exact quantity of seed to the acre you want to sow. -----(As if interrupted) What say? ----- "Directions come with the machine?" -----

Yes. The manufacturer usually furnishes a scale or calibration chart. That shows the quantity of seed sown to the acre for each adjustment of the delivery mechanism. But that chart is based on average conditions. It is usually dependable as an approximate guide. However, you know seed vary considerably in size and shape and weight and condition. At the same setting of the machine, the rate of seeding for one sample of grain may be different from that of other samples. That's especially the case with seed like beans and peas.

Then too the adjusting mechanism may have become loose, or bent, or changed in some way from the way it was when it was inspected at the factory. The real delivery rate may be a bit different from what the indicator shows.

So you see, in order to know definitely the exact quantity of grain that will be sown to the acre by any drill or planter, you need to calibrate the machine.

Here is a grain drill. In order to calibrate this machine, we raise one or both wheels off the ground. That is so we can turn the wheels freely. Then we also lift the tongue into its normal position when the drill is in operation.

All right. Now with the machine jacked up that way, we are ready for the test. We just fill up the hopper with grain. Then we set the quantity lever at the point we figure will give about the right rate of seeding.

Of course, we need to know how many times the land wheel turns while the machine is covering an acre of ground. That's easy to calculate from the width of the drill and the circumference of the land wheel.

Knowing the number of revolutions needed, we just throw the drill in gear and turn the wheel the right number of times. As the grain comes out, we catch it in a suitable container. Then we can either weigh it or measure it accurately. Or, if it takes too many turns of the wheel for an acre, you might use the number of turns for a certain fraction of an acre and then multiply so as to get the right amount for the whole acre. ----(As if interrupted) Sure ---- This gentleman says his drill has a land measurer---

Of course, with a land measurer on the machine to show the acreage covered, you don't need to calculate the number of turns of the wheel. All you do in that case is just turn the wheel until the land measurer shows you have covered an acre. Then you either weigh or measure the grain delivered.

If the quantity of grain delivered by the drill is too little or too much, you change the quantity lever accordingly. Then you repeat the test. It won't take over two or three trials to find the proper adjustment of the machine. -----(As if interrupted) How's that? ---- "How about fertilizer distributors?"

It's the same way with them. That method of calibrating drills also applies to all kinds of seeders, and fertilizer distributors, and similar distributing machinery. -----(As if interrupted) Yes?----- What's your question? ----- "In the field?" ---- Surely.

Yes, as you say, you can determine the amount of seed sown, approximately at least, by careful observations while you are operating the machine in the field; provided you know the dimensions of the field or provided the machine has a land measurer to show the acreage covered.

However, a big acreage is likely to be covered before you can find the rate at which you are planting. Better calibrate the drill first to find the proper adjustment. Then use your field observations as a check on the working of the machine.

When you see a farmer look at a growing crop and hear him say, "I guess I must have planted too much seed", you can put it down that that farmer didn't test his seeding machine before going into the field.

I don't suppose there is any use in going into tests to determine the number of kernels dropped in a hill. You often want to know that in calibrating corn plants and such like planters which drop the seed in hills. That sort of test is so common, I don't need to say anything on that score.

In order to be sure you understand this other test, however, let me go over the main points again.

First, Block the machine up in its normal position; so you can turn the wheels.

Second, Set the quantity lever where you figure it should be.

Third, Turn the land wheel enough times for the machine to cover an acre, or a certain fractional part of an acre.

Fourth, Weigh and measure the grain delivered.

Fifth, If the delivery rate is the rate you want or the rate shown by the indicator, further testing is unnecessary.

Sixth, If the quantity of grain delivered by the machine is more or less than you want, make your adjustments accordingly and repeat the test.

ANNOUNCEMENT: Well, this is the last meeting of the Farm Forum this week. Monday, however, I want you all to be here to hear what is going to be said about swine sanitation. Tuesday, we'll talk about poultry, as usual. On Wednesday we'll go after some of the bugs doing damage around these parts. Thursday, the subject will be the value of pastures for dairy cows. Friday grazing and fire protection will be the subjects.

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THE FARM FORUM

Mon. March 11, 1929.

NOT FOR PUBLICATION

Livestock Meeting No. 24: Swine Sanitation.

ANNOUNCEMENT: The Farm Forum will be in order! -- The Doctor here is going to tell us how to raise pigs --- better pigs and more of them. That is, he is if you are not already following the system of swine sanitation worked out by the U. S. Department of Agriculture -- All right, Doc, we're hogs for information, on how to grow better paying pigs.-----

I take it you men already know what I am going to tell you. But as somebody has said; We don't need so much to be informed as to be reminded.

I just want to remind you of the swine sanitation system worked out by the Bureau of Animal Industry in McLean County, Illinois, some years ago.

I take it most of you farmers are now using that system. It has spread pretty well all over this country. In fact, it has spread beyond our own country. It is now being tried in points in the West Indies and is also being used in France.

There's nothing fancy about it. It is a plain, common sense plan worked out in a practical way in the field, in order to prevent losses of pigs from roundworms. It is a good, sound, paying proposition, as many of you know.

I wouldn't go as far as some folks do, and make out that this simple system of sanitation will prevent all losses of pigs. of course, it doesn't in itself cut down the losses from exposure to cold, or the pigs being killed from mechanical injuries, or other causes like that.

However, as you men may realize, roundworms picked up by young pigs cause tremendous losses. The worms, too little in some stages, to be even seen by the naked eye, ride in the blood of the pig to the lungs of the pig and probably cause most of those cases of thumps. Often the pigs die of pneumonia. When the worms visit to

their lungs doesn't kill them, the pigs often don't get over the attack and fail to grow and develop normally.

On many farms such losses are now being prevented by the use of this swine-sanitation system. Many farmers say they can raise as many pigs now from two sows as they used to raise under dirty hog-lot conditions from three sows. Not only that, but all the pigs, those which might have died from roundworms as well as those which might have lived through, are ready for market four to eight weeks earlier.

That means that much savings in feed and care; to say nothing of the better prices due to the fact that the herds are of the same size with hardly any runts in the herd.

It is a practical dollars and cents proposition. Let's say it costs about \$20 to carry a sow and her litter from breeding to weaning. That's a fair estimate for this spring's crop of pigs. That would make each pig weaned in a litter of four pigs cost \$5.00. If there were six pigs weaned in a litter, the cost would be only \$3.33 a pig. And if you weaned eight pigs to the litter, the cost per pig would be only \$2.50; or just half as much as in case you weaned four. By cutting the cost you increase the profits. By saving more pigs, of course, -----(As if interrupted) What's that ----- "What is this pig-saving system?"

---Oh, beg pardon, I thought you all knew just how that works. I thought most of you followed that system ----- Anyway, if you want know about it, I'd advise you to write to the U. S. Department of Agriculture for that free Leaflet No. 5 on "The Prevention of Roundworms in Pigs."

However, I guess several of us here could tell the chief things to do.

First, take all the litter and trash out of the farrowing pens. Then clean the pens thoroughly with hot water, and soap, and lye. And I mean thoroughly. Use a shovel and a brush, and put plenty of muscle grease behind them.

Then, a few days before farrowing time, scrub the sow thoroughly. Use a brush and soap and water. Get the dirt and worm eggs off. Pay special attention to the udder, but don't neglect any part of the sow -- not even her feet.

All right, now then you put the clean sow in the clean farrowing pen. When the sow has dried off after cleaning and before farrowing, oil her so as to keep down lice and mange.

So far, so good. Ten days or so after farrowing haul the sow and little pigs to a clean pasture. As the old song used to go, "Don't let her feet touch the ground." Transfer her from the clean pen to a

clean pasture in a clean crate or clean wagon or truck. In the South and in the fall of the year in the North, many sows farrow while on pasture - which makes the system even simpler than I have described.

Now that clean pasture should have a suitable forage crop growing in it. By "clean" pasture, I mean a pasture where there hasn't been any pigs since the crop was sown. And a pasture where you can keep other pigs away and keep the new pigs away from the dirty hog lots.

Of course, you should provide plenty of shade and shelter, and a fresh, safe, water supply for the pigs. If water which drains the hog lots runs into the "clean" pasture, it isn't clean. The new pigs may get worm eggs from the water.

You should leave the pigs in the clean pasture until they are at least four months old; or until they average 100 pounds in weight. And, when it is possible, better leave them in the clean pasture until you turn them into the cornfields or otherwise fatten them for market.

---Now, I just wonder, how many of you farmers here follow this plan of raising pigs on clean pasture? ----- Hands up. ----- Ah, that's good! ---- I see there are quite a few of you ----- But I noticed that some of you were kind of hesitant about sticking your hand up ----- You acted as if you were a little bit doubtful --- or rather as if you were making some kind of mental reservation.

My guess is some of ^{you} follow this system roughly, but you "cut corners." Isn't that right?

Well, if you slight some feature, you may get fairly good results. But you'll never get as good results as if you follow this plan of sanitation 100 per cent. To get the best results, you should follow this system and follow it thoroughly.

ANNOUNCEMENT: Any of you who want that leaflet can get it either through Radio Station or by writing direct to the United States Department of Agriculture at Washington, D. C. The leaflet gives the details of this system of swine sanitation. It is called "The Prevention of Roundworms in Pigs" and is Leaflet No. 5-L.

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THE FARM FORUM

Tuesday, March 12, 1929.

NOT FOR PUBLICATION

Poultry Meeting No. 24:

Services to Poultrymen.

ANNOUNCEMENT: The Farm Forum will be in order! ---As Lincoln put it, this is a government "of the people, by the people, and for the people." --- That includes poultry raisers too. Right now, some of the big chicken and egg men realize it is a government by the people; including the privilege of footing the bills. Today, we have with us a specialist from the U. S. Department of Agriculture. He is going to tell us what one branch of the government is doing for the people; the poultry people.

My subject is not quite that wide, Mr. Chairman. I am just going to tell you the chief things the one Bureau of Agricultural Economics of the Department of Agriculture does for poultry people. But that is a good deal.

Whether you have a big or a little flock of chickens, and whether you produce a few eggs or many crates of them, Uncle Sam is your partner in the business. He keeps up an elaborate system of investigation and reporting to help you.

For instance, through his agents, he keeps track of the market for you. His end of your poultry farm business includes offices in the principal markets for poultry and eggs. Those offices are^{all} connected by an extensive leased wire telegraph system, so the reports from the different markets can be sent to you and sent to you quickly.

Reports of receipts of eggs and dressed poultry at New York, Chicago, Philadelphia, Boston, and San Francisco are made. Receipts of each class of live poultry at New York are reported.

Carlot movements of eggs from principal shipping points on the Pacific Coast, are reported weekly.

Annual estimates are made of the poultry on farms the first of each year, and the production and value of chickens and chicken eggs from year to year. Prices received by producers are compiled each month by states.

Information regarding production in foreign countries and conditions likely to affect production in this country are obtained.

In fact, the whole market network is designed to provide the prices of poultry and eggs, and the production, and the stocks on hand and the movement

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to market; all the information needed for people in the poultry business, whether as producers, of handlers or dealers, to carry on their businesses and market their goods in the most intelligent manner possible.

All that information is sent out all over the country quickly through special reports, weekly and monthly reviews and through the newspapers and other publications, and a lot of reports are broadcast daily and weekly by radio.

But supplying the information is not all the Bureau does. The Bureau's men have worked out U. S. Standards of quality for eggs besides three sets of standard grades. Those last are known as the U. S. Buying Grades. They are intended for application to eggs at country points where eggs are bought from producers on a quality basis. They are also U. S. Wholesale Grades intended to be used for lots of eggs in wholesale channels of trade.

These grades haven't yet come into general use, but they are being used more and more. Preliminary work has also been done for both live and dressed poultry.

The Bureau does not stop with working out the standards. It establishes services and does the actual grading according to the standards set up. Egg grading services have now been established in New York, Philadelphia, Boston, Washington, Los Angeles, San Francisco and Chicago, and in the states of Virginia and West Virginia. Fees are charged to cover the cost of the service.

At Washington, a dressed poultry grading service has been established. A number of institutions are buying poultry on U. S. standards and grades. Christmas before last, three cars of turkeys were graded. Those graded U. S. Prime were stamped and tagged for retail trade. That work went so well with customers and retailers that this past Thanksgiving and Christmas, the same sort of service was offered in New England, and New York, and Baltimore, and Washington. A total of over 1-1/2 million pounds was graded that way.

In New York City, all live poultry received by freight and most of that received by express is inspected for condition of health and for over-cropping by men licensed and supervised by the Federal Department of Agriculture. The work is carried on with the live poultry trade and is supported entirely by a fee collected for the service.

Another new service is the inspection of dressed poultry for condition and wholesomeness. Competent veterinarians are licensed and work in plants where all poultry passing through is inspected. Carcasses found in a diseased or unwholesome condition are condemned and destroyed. The labels put on cans of poultry food products prepared from inspected and certified poultry are permitted to read "Inspected and certified by the Bureau of Agricultural Economics, U. S. Department of Agriculture."

Besides these regular services, the Bureau investigates special problems in poultry farm management, and marketing. Studies are made of the preparation, and the grading, and the packing, and the processing and transporting of poultry products. Right now, the Bureau is planning a comprehensive program of research to get more complete information than is now to be had about poultry conditions

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in each state. Working that state material in with the other statistical material gathered, will give a complete picture of the poultry business in this country from A. to Izzard.

That gives you just a brief glimpse of some of the things the Department is doing for the poultry business ----- (As if interrupted) --- How's that? ---
"How does that help the chicken raiser?"

Well, as I said, market information enables him to market more intelligently. "Knowledge is power" in the poultry business as it is in other places. And all this standardization and grading, will eventually enable the farmer who produces high grade chickens and eggs, to get paid according to quality. It will mean a fairer return for his work and less chance of being penalized for the carelessness of the other fellow.

ANNOUNCEMENT: Tomorrow's meeting of the Farm Forum will be to discuss the potato leaf hopper and hopperburn on potatoes. Thursday, we will talk about the value of pastures for dairy cows. And remember this time next week, we will have a big meeting on chick feeding. Any of you who have any questions about feeding, can get them answered here next Tuesday.

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1.9
In 37 THE FARM FORUM

Wed. March 13, 1929

NOT FOR PUBLICATION

Crops and Soils Meeting No. 24: The Potato Leafhopper

ANNOUNCEMENT: Order in the Farm Forum! -----Now is the time to prepare to fight - potato troubles later in the season. For that reason, we've asked this potato insect expert from the U. S. Department of Agriculture to tell us what's the best thing to do. I told him to pick out the worst pest he could think of --- and go to it -----

I am going to talk about a pale green pest.

When it gets in a potato patch, it often gives the potato grower cause to turn pale green, too. Especially during hot dry weather. It's one of our worst yield-cutting, income-sucking potato insects. It is known as the potato leafhopper.

But it begins damaging potatoes long before it can hop. When it is full grown, the leafhopper crawls and flies too. But when it is young, it hasn't any wings. When those leafhopper babies crawl they crawl sideways like crabs. And the damage they do is sometimes staggering.

They feed on the undersides of the leaves. They feed by sucking the plant juices. That's why I call them income-sucking pests. When they suck the plant juices, they start the damage, that reduces the yield, that furnishes the income, that the potato grower banks on.

It isn't the direct feeding that does the most damage, however. Most of the damage is due to the fact that the feeding of the leafhopper causes that potato disease we call hopperburn. As many of you already know, hopperburn first shows as small brown patches on the edges of the leaves on which the leafhoppers have been feeding. As the disease gets worse, the leaves curl upward. The brown patches spread. Finally they cover and kill the whole leaf.

Yes, the only good thing you can say about leafhoppers and hopperburn is that you can control them. You can, if you use Bordeaux

mixture and make sure you put on the mixture so as to cover all parts of the plant -----(As if interrupted) What? ---"Spraying or dusting?"

Either one will work. Experiments in Wisconsin under actual farm conditions show that dusting with the copper-lime dust of a Bordeaux mixture is just as good as a Bordeaux mixture spray. -----
--(As if interrupted) "How often?"

Well, of course, that depends on weather conditions and the amount of hopperburn in the fields. Leafhoppers multiply fast in warm weather. They are most plentiful in years of hot, dry summers.

Under such conditions, you may expect four applications of the spray or dust to increase the yield of potatoes sixty to seventy bushels to the acre, ranging from as low as fifty to as high as a hundred bushels.

Now in seasons of cool, wet summers, when there are not so many leafhoppers, the effect of the treatment, of course, is not so pronounced. Three or four applications may be expected to increase the yield from only twenty to twenty-five bushels to the acre.

But the increase in the total yield doesn't tell the whole story. There's another advantage from control of leafhoppers and hopperburn. The treatment increases the percentage or proportion of number one potatoes. For example, in 1922, Green Mountain potatoes sprayed four times with homemade Bordeaux mixture yielded 77 per cent number one potatoes. The check or unsprayed Green Mountains yielded only 59 per cent of number one potatoes. The balance were number twos and culls. The difference was 18 per cent of number one potatoes in favor of the sprayed plots.

That shows what you can expect in the way of increasing the proportion of number one potatoes in bad hopperburn years. At such times, potatoes are usually selling at a good price. And number one potatoes are the cream of the crop.

In years of light hopperburn, the increases are naturally smaller. They vary from nothing to a four per cent increase.-----

As I said, proper spraying and proper dusting may be expected to give about the same results in total yield and percentage of number one potatoes. Spraying is a little better in severe hopperburn years, whereas thorough dusting is a little better in light hopperburn years.
-----(As if interrupted) What's that? ----- "difference in cost?"

Very little, if any. A comparison of the cost of spraying and dusting an acre of potatoes four times shows that it cost \$11.26 for spraying and \$11.97 for dusting. The biggest item in the cost of spraying is \$6.28 an acre for labor. In dusting the biggest item is \$8.35 an

acre for materials. -----(As if interrupted) Yes? ----- "How?"

Well, to get the best results with a spray, you should do the spraying with a power sprayer equipped with a 12-nozzle boom. In that way, you have three nozzles to a row and can cover four rows at once. Understand, two of those three nozzles should be so arranged as to spray the sides of the row and the middle one, above the row, should direct the spray downward to get the tops of the plants.

Of course, on small garden patches, you can use hand sprayers or dusters. The spray we use is a mixture of four pounds of copper sulphate and five pounds of hydrated lime to each fifty gallons of water.

The dust to use is a commercial copper-lime dust with either twenty or twenty-five per cent of monohydrated copper sulphate. You can put the dust on with a four row traction duster equipped so the dust will come out from a nozzle on each side of the row. Do your dusting when there is little or no wind. The best time is when the dew is on the plants.

The chief thing, however, is to get the leafhoppers before they get your potatoes.

ANNOUNCEMENT: Tomorrow we will talk about the value of pastures for dairy cows. Then Friday we have our regular Friday meeting. Next Monday we have a livestock man here to talk about caring for the ewes at lambing time. Tuesday, every chicken-raiser should be on hand, so we can feed the chicks right.

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★ MAR 17 1929 ★

U. S. Department of Agriculture

1-9
In 37a
THE FARM FORUM

Thursday, March 14, 1929.

NOT FOR PUBLICATION

Dairy Meeting No. 24:

Pastures for Dairy Cows.

ANNOUNCEMENT: Dairymen will please find seats! --- This Farm Forum is now in order! --- The first thing on the program today is a talk by one of our friends from the U. S. Department of Agriculture. He is going to give us a few pointers on pastures ---

Don't turn the cows out on pasture too early.

That's a common mistake; to turn cows on pasture too early in the spring. It hurts the grass. And it doesn't help the cows much. Grass so early in the spring is short and watery. It hasn't much feed value.

That being the case, the cows have to do a lot of traveling to satisfy their appetites. On some soils, they tramp the ground so that the stand of grass is damaged. It is much better to let the grass get high enough, so the cows can get their fill in a few hours.

pasture
Then, too, it is important that the/grass be grazed neither too much nor too little.

As the grass grows it gets more woody and less tasty. True, the pasture will produce a bigger total of food material if you let it grow tall. But what good does that do when the cows don't like it as well and therefore make little use of it, but graze the spots where the grass is short?

But if the grass is kept grazed too short it can't grow properly. In order for grass to grow, it has to have green coloring matter. The more green coloring matter there is the more the growth. When there is comparatively little green there to work, the yield of grass is less.

And the cows need green stuff in their ration. That's not only for the food in the grass, but because green forage contains something which helps animals make better use of the lime and phosphorus in their feed. They need that lime and phosphorus, but they can't seem to make the best use of it without that green stuff.

If it weren't for that, we might quit feeding a cow green forage without hurting her health or cutting down the amount of milk she gives. When cows get

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If it weren't for that, we might quit feeding a cow green forage without hurting her health or cutting down the amount of milk she gives. When cows get



green soiling crops of the right kind or properly cured legume hay with green color still in it, they do fairly well without pasture.

However, it takes considerable work to raise soiling crops. And, as for green-colored hay --- that's a scarce article east of the Mississippi. That leaves pasture grass as the best feed available for supplying the green.

Not only that, pasture grass is the cheapest of all cow feeds. Of course, you might be able to produce as much feed from cultivated crops on the same amount of land, but pasture grass will grow on ground that's too hilly or rocky for cultivation. And it doesn't take much labor to produce it either-----
(As if interrupted) Yes? --- Certainly -- I'm glad to have questions. ---
How? ----- "How much is pasture worth?" ----- I'm glad you asked that.

Did you all hear that question? This man wants to know what pasture is worth -- What's its value to the dairyman.

It is certainly worth more than is ordinarily charged for it, if you estimate how much hay and silage it saves. In general, I'd say it takes the place of roughage in the cow's ration.

In the spring and early summer, when the grass is tender and there's plenty of it, pasture will more than take the place of roughage. It has a fair amount of protein in it, so at that time, you can feed less grain than when the cows are stable fed. Of course, later in the season, when the grass becomes shorter and drier, the cows have to work harder to get what they need. That and the hot weather and the flies tend to keep cows from grazing as much as they otherwise might. So, you see, pasture is less valuable then than earlier in the season. In fact, it is often a good idea late in the season to supplement pasture with hay or silage or soiling crops. Taken all through the season, however, good pasture will, on the average, furnish as much feed value as is ordinarily had from roughage.

Now, if you want to figure that on a money basis, you can get a good idea what your pasture is worth to you. A cow of average production and weighing 1,000 pounds will eat about 30 pounds of silage and 10 pounds of hay a day.

All right, if that silage is worth \$4 a ton and the hay \$10 a ton the roughage costs 11 cents a day or \$3.30 a month. As the pasture takes the place of the roughage, the pasture grass eaten by one cow will be worth \$3.30 a month.

If the silage is worth \$8 a ton and the hay \$30 a ton, the roughage costs 27 cents a day. That makes a month's pasturage worth \$8.10. If the prices of silage and hay are between those amounts, the value of the pasture will vary from \$3.30 to \$8.10 -- Does that answer your question? ---

There is one thing I want to impress upon everyone here. That is; Pasture is the most neglected of all farm crops.

You should never be satisfied with half a crop of grass; any more than you would be satisfied with half a crop of corn.

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Prepare the seed bed as carefully as you would for any hay crop such as alfalfa or clover. If your land is swampy at some seasons of the year, you may need to drain it. And always make sure that your pasture is made up of the mixture of grasses and clover or other legumes to give you the best results.

You can find that out by trials. Or you can follow the recommendations of your State experiment station or your county agent if they've made trials under conditions similar to yours. Put on manure, or lime or commercial fertilizer, or all three, according to the condition of the soil and the growth of the grass. As you all well know, grasses respond enormously to fertilization.

And remember this --- There is a direct relation between the minerals in the soil and in the grass which grows on that soil. If you want pasture grass rich in lime and phosphorus, make sure that the soil itself is rich in lime and phosphorus.

And, of course, keep the weeds mowed. It costs little to keep the weeds mowed, compared to the benefits you get from having the pasture freed from them.

ANNOUNCEMENT: Tomorrow we will have our regular Friday meeting of The Farm Forum, and I want you all to be on hand. Then next week starting Monday we will have an important series of talks or discussions on various subjects. Monday, the subject is the care of ewes at lambing time, and Tuesday we will discuss Feeding chicks.

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★ MAR 13 1929 ★

U. S. Department of Agriculture

1-9
In 37a
THE FARM FORUM

(Region 1)

Friday, March 15, 1929

NOT FOR PUBLICATION

Forestry Meeting, No. 24a:

Spring Fires.

ANNOUNCEMENT: The Farm Forum will be in order! --- We have with us a Forest Ranger. You know, he belongs in the Forest Service of the U. S. Department of Agriculture. We are glad to have him, because he says he can help us make money, by not losing so much of it in the way we handle our woods. I wanted him to speak to us later in the year, but he said this was just the time it was most important for him to be here ----

Yes, Mr. Chairman, just as surely as spring rolls around, about nine-tenths of the population starts spring cleaning. Far be it from me to discourage them! --- Clean up --- That's a good idea, but please be careful the way you do it.

The Missus will soon be gathering up the old papers, and worn-out clothes, and broken toys, and whatnot, and carrying them out behind the barn to burn them.

You farmers, and your neighbors, will be raking up the fallen leaves, and the dead grass, and the old potato vines and tomato vines, and corn stalks, and the like. You will rake them into piles. Then when a good day comes along you will set fire to the piles.

Some of you may even burn over some of the meadows. On the face of it, there may be some good in that old custom. Of course, it wastes valuable soil food. Taken all in all, there shouldn't be much harm, however, if that didn't lead to fires. The reason it leads to fires in the woods is because folks who start the fires use poor judgment in doing it.

Why, did you realize, that in the northeastern part of this country alone, 140,000 acres of forest, brush, and grass lands are burned over every year. Those fires, and there are 4,900 of them a year, cause over half million dollars worth of damage in spite of the three-quarters of a million dollars we spend to keep them down.

And the worst part of it is that practically every forest fire in this region is due to carelessness - or thoughtlessness. One of the big causes are these brush fires, I was just talking about; those spring cleaning fires.

Practically every one of those fires is set by law-abiding, respected people of the community. Of course, they don't have any intention of letting the brush or trash fire get beyond control. But those fires do get beyond control, and statistics prove it ----- (As if interrupted) ----- What say? --- "How can we prevent it?"

Well, there are several things you can do which will help. In the first place, it is usually safer to burn brush after four o'clock in the afternoon. So burn your brush piles after four o'clock.

The air is cooler and damper toward evening. Fires don't spread so easily then. You are taking long chances when you start a fire in the morning and leave it to go to dinner at 12 o'clock. That's when many fires get out of bounds. No fire should be left untended at any time. So never leave your fire untended, until it is out.

And if there are just one or two of you doing the burning, better not start to burn up more than one or two brush piles at a time. If you start a number of piles, and the wind comes up suddenly, things may get dangerous in a hurry. One man may stop one spreading fire when it first starts, but he can't stop half a dozen. So burn one or two piles at a time.

Make only small brush piles. Have enough helpers on hand to handle any possible situation that may develop. Have some water handy in pails. Better still, have a tank with a spray pump. Anyway, have such tools as a shovel or rake or broom handy.

Many a brush or trash fire could be prevented from getting away and doing damage by piling the brush or trash on plowed or bare ground, where there would be nothing for the fire to feed on.

And whatever you do, never pile brush for burning at the foot of a dry, grassy, brushy, or wooded slope. If the fire spreads and starts up the slope, it is almost impossible to stop it until it gets to the top.

Of course, where a brush-burning permit is required, you should never start a fire until the forest fire warden issues you the permit. Just because the warden may be your friend or neighbor and won't arrest you is no reason for violating the law ----- (As if interrupted) ----- How's that? --- "How many fires are started" what "way?" ----- From brush-burning?

Well, here are the figures for the 10 years ending in 1925. Railroads in this northeastern part of the country were responsible for nearly one-third of the fires. Smokers caused 18 per cent, and people burning brush, leaves, and trash 11 per cent.

That was then. Railroad fires are on the decrease the figures show. But fires caused by brush burners and tobacco smokers are on the increase.

As you all know, there is more smoking now than ever before. Tobacco and the matches used in lighting tobacco are a growing menace to our woods. Lighted tobacco in any form is a dangerous thing to throw around carelessly. Break your matches before you throw them away. When you throw away a cigarette stub or a cigar stub or glowing pipe tobacco, grind it under your foot into mineral soil or put it into some safe receiver.

Early spring fishermen often cause many big fires --- carelessness again --- with fire and tobacco. And people in automobiles driving along the country roads in the spring cause many fires when they toss their burning matches or lighted tobacco into dry grass or leaves alongside the road.

Why not equip your auto with an ash receiver? Then you won't have to toss them out of the car.

Wherever you use fire in any form be careful to keep it in control.

ANNOUNCEMENT: The U. S. Department of Agriculture has a bulletin on "The Care and Improvement of Farm Woods." You can get it free of charge by writing to Radio Station _____, or by writing direct to the U. S. Department of Agriculture, at Washington, D. C. The number of that bulletin, which you should use in ordering, is Farmers' Bulletin No. 1177-F. Did you get that? Farmers' Bulletin No. 1177-F.

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MAR 13 1929

Department of Agriculture

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Jan 37a
THE FARM FORUM

Friday, March 15, 1929.

(Region 2)

Forestry, Meeting No. 8b:

Spring Woods Protection.

ANNOUNCEMENT: The Farm Forum will be in order! --- All you men who own any woods, better gather up closely. We have a forestry man here from the U. S. Department of Agriculture. He has a few things to say to us about protecting the farm woods from fire and also something about grazing -----

As far as grazing the farm woods is concerned, I'd say, better not do it. Livestock grazing and timber growing, on the same part of the farm, just don't go together in this central hardwood section of the country.

Practically all kinds of young hardwood trees are subject to damage by grazing. The stock seem to be especially fond of young elm, and ash, and maple, and basswood, and yellow poplar.

And it is especially important to keep the stock out of the woods in the spring, while the growth is tender and the grass is scarce. Also during the hot dry spells in summer, when the grass is more or less dried up. When you turn very many head of stock into the woods, they are almost certain to damage the young growth. They will either eat it, or break it, or trample it, or they'll strip the bark off the young trees.

In fact, I'll say just this much about pasturing livestock in the woods; pasturing in the woods is the biggest thing in the way of getting natural young growth in the woods. And I don't have to tell you farmers, that the young trees are what you have to depend on to keep the woods producing. Just remember, timber is a crop, the same as any other farm crop, except that it takes more time to grow a crop of timber.

And right now is the time to take extra precautions to prevent any farm operation from causing fires in the woods.

Here in the hardwoods region, we have two bad fire seasons. One is in the fall; after the leaves have fallen and before fall rains set in or the snow begins to fly. The other, and the worst and longest fire season, is right now, in the spring.

The accumulation of leaves and other litter gets drier in the spring and fires burn hotter. Then we are more apt to have high winds at this time of the year. High winds fan the fires, make them burn faster and spread farther. And, of course, the young tender tree growth with its fresh rising sap is more subject to damage by fire.

Now's the time to take extra care with your woods. And guard your woodlands against any fires set by cattlemen. ----- Yes, it's poor business, but some folks still stick to that old custom of burning the woods to get better pasture. The land is often worth much more for timber growing than it is for grazing. If it was growing all the timber it should, there wouldn't be any room for grass.

Some people don't seem to realize how serious fires in the woods are. Much of our mature timber and our second growth timber here in the central hardwood region has been badly damaged by fire after fire.

Stroll through the woods. Notice the damage yourself. The fires burn through the bark into the live wood. They make fire scars. That gives the insects and the rots a chance to get into the trees. And the insects or rots never miss the chance. You can see a sample of bad damage from fires when you cut trees and find hollow, rotten centers. Of course, such trees don't bring the best prices.

Fire damage is so serious, that with only one exception every State in the Union, which has much timber, has its own State forestry department and has joined with the Federal Government to help manage woods better and check fires. The Federal Government furnishes some funds to help State forestry departments fight fire. Where ever fire protection has been organized in a State, all woods, including the small farm woods, are given as much protection as the State can pay for with the funds they have.

However, whether you have the advantage of organized fire protection or not, it pays to use all possible care to keep fire out of the woods.

Some of you here in the central hardwoods region don't seem to realize how well located you are. In this section, we have markets close at hand; first-rate markets not only for high grade hardwood lumber, but for every kind and as much of it as can be grown.

Just remember, the big furniture, and veneer, and wagon, and farm implement, and automobile factories are in this hardwood region. Why the seven States of Illinois, Indiana, Iowa, Kansas, Missouri, Nebraska, and Ohio use one and a half billion board feet of hardwood sawtimber alone each year. And remember, that is not counting the tremendous quantities of posts, and poles, and ties, and mine props and cordwood that are used. ----(As if interrupted) What? --- "Don't get it from farm woods?"

Yes, sir! --- Much of our most valuable hardwood timber comes right out of the farm woods. In fact, the greater part of the forest-producing acreage in the hardwood belt is in farm holdings. That is, most of it is in holdings of less than 100 acres. In the better farming sections, the farm woods are often only 10 to 40 acres.

We haven't as much as we once had. So much land has been cleared, that most of the timber left is in farm woods. That is quite a bit. "Though much is taken, much abides." We still have enough left in this region to keep on producing enormous supplies of hardwood timber and other high-quality woods products, if we manage those woods well. Good management means, first and foremost, keeping fire out of your woods. Farmers' Bulletin 1177, on the "Care and Improvement of the Farm Woods" will give you many more pointers on management. Why don't you write for it?

ANNOUNCEMENT: Next Monday's meeting will be held at the same time and place. If you are raising any sheep, you will be interested Monday. We are going to talk about care of the ewes at lambing time. --- Oh, beg pardon -- just one moment. You can get that bulletin on "Care and Improvement of Farm Woods" free of charge by writing to the U.S. Department of Agriculture for it. Ask for Farmers' Bulletin No. 1177-F.

★ MAR 11 1929

U. S. Department of Agriculture

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THE FARM FORUM

(Region 3)

Friday, March 15, 1929.

NOT FOR PUBLICATION

Forestry Meeting No. 3d:

Woods Burning

ANNOUNCEMENT: The Farm Forum will be in order! -- We have a Forestry expert from the U. S. Department of Agriculture here. I casually mentioned fires and woodsburning the other day, and ^{he} got hot under the collar right away. He told a few of us a few plain truths about woods fires in the South. We asked him to come up here and tell you all about them.

Stop woodsburning! -- Not because I say so, but because it will pay you and pay you big to do it.

Some folks keep setting fire to the woods at this time of the year. I take it that none of you here do; but somebody is doing it, and it is up to you to stop it.

I know, some of you may say, that they always have done it. It is a custom. But it should be a custom "more honored in the breach than in the observance."

What would you think of a man who had the habit every time he lighted his pipe of using a ten-dollar bill to do it? He would get a light all right, but he would be paying too much for his smoke.

Some of you don't seem to realize how much you are paying for these woods fires. The woods-burner who lets fire kill the young growth in the woods is burning up wealth as surely as the man who lights his pipe with a ten-dollar bill.

Because so few of our fires in the South are the spectacular kind, a good many people don't realize that they do millions of dollars worth of damage every year. They don't realize that about 20,000,000 acres of forest and cut-over land are burned in the Southern States each year. That is about 80 per cent of the total forest area burned in the United States. Yes, sir, more than three-fourths of the land burned over in the United States is right here in the South. Nearly every owner of woodland is hit by that annual loss. In fact, if you count the drain on our general prosperity, everybody in the Southern States is hit by it.

In some sections of the country, a forest fire kills every tree on the land burned over. In the South that doesn't often happen. Most forest fires in the South burn along the surface of the ground. Usually our fires don't get into the tops of the bigger trees.

But even if the big trees are not killed outright, they are damaged. Fire scars are formed on the base of the trees. Those scars or "cat-faces" give insects and rots an easy-entrance.

As the trees grow older that rot spreads upward until the lower part of the tree is entirely infected and worthless. As you know, the most valuable part of a tree is the part near the base. It is free from limbs and has more clear lumber. But many stands of pine and hardwoods in the South have been burned so many times in past years that little high grade lumber can be cut from the first logs in the trees. In many cases, the burning gradually weakens the base of the tree until it finally breaks off and falls.

Of course, you all recognize that fires burning in the grass, and litter, and leaves will kill the younger trees outright. Some are easier killed than others. All stand up against fire better as they grow older. ----- (As if interrupted) What? ----- "Why's that?" did you say?

Well, the resistance depends more on the thickness of the bark than anything else. Longleaf pine can stand more fire than any other species of trees in the South, but even longleaf pine can't stand repeated burning. There are millions of acres -- yes, millions --- in the longleaf pine region that are now barren. They produce nothing but low-value wild grasses. That land would now be growing stands of longleaf, if it wasn't for the fires year after year.

You can check up on what I say, by walking through the woods. Ground fires leave plenty of evidence. But there is a great deal of damage that's not so noticeable.

Measurements show that longleaf pine in Louisiana grows four times as fast on unburned land as it grows on land burned every year. Fires check or stunt the growth of other kinds of trees worse than that.

In many cases, fires also cause the cut-over woods to grow up with low value or even worthless trees and brush which may happen to stand fire better than the more valuable sorts. Often that dense growth of scrub oak on land that was originally covered with valuable pine or hardwoods is due to fire.

Not only that, but woods burning robs the soil. And the losses are heavy, even if few people do recognize them. If you let leaf litter, and pine needles, and other dead vegetation decay, it gradually makes the soil richer; richer for growing timber or for growing other crops.

On the other hand, if the land is burned over once a year, or even once in several years, all that valuable natural fertilizer is destroyed. That is, all of it except the few minerals left in the ashes. Most of those are washed away in the rain.

And there's another way woods fires get in their damage. Soil on farmed over hillsides and even moderate slopes has a tendency to wash away. The washing may form gullies or it may just take the soil off all over so it is less noticeable. Anyway, it takes the top layer which is the best soil.

However, a hillside covered with timber and protected from fire doesn't wash away. The soil stays put. The leaves, and pine needles, and the like hold the water and keep it from flowing off fast. Of course, if the litter is swept by ground fires, it is not there to do its work of holding the water.

The sad part of it is that most of the fires in the South are man-caused. Deliberate woods-burning is largely responsible. Just because the Indians or early settlers may have burned the woods, is no reason for a modern farmer to keep up the practice. Whatever temporary value the misguided, short-sighted woods burner may think there is in it, is far offset by the tremendous damage it does.

This damage can be prevented. And each man here should help see to it that this waste is stopped. Remember, it pays to protect the woods from fire.

ANNOUNCEMENT: Next Monday we will talk over the care of ewes at lambing time. Tuesday we'll talk about feeding chicks. Wednesday we'll discuss fruit and vegetable standards. Thursday, our subject is making butter on the farm. And Friday, our Farm Engineer is going to show us how to get the most out of the tractor.

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★ MAR 11 1929 ★

U. S. Department of Agriculture

Fri. March 15, 1929.

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THE FARM FORUM

(Regions 4 and 5)

NOT FOR PUBLICATION

Forestry Meeting No. 8: The Spring Range Problem

ANNOUNCEMENT: Order in the Farm Forum! -- For many years the custom around here has been to turn the stock out on range as soon as there's any green grass. That kind of thing is ruining the range -- at least, that what's this Forage Specialist for the U. S. Department of Agriculture says --- but I'll let him tell his story -----

Yes, there are two sides to this early range question.

There is the side of the range.

Then there is the side of the livestock.

And from both sides, too early grazing is bad practice.

A cow can't put on much weight when she has to walk a mile for a mouthful. And not only that, but when you force cattle to get along on the scant feed they can find on early range, losses are apt to be heavier. And the calf and lamb crop is apt to be lighter.

That early green feed is too watery. In fact, the feed value of that early "washy" forage is so low that stock don't make very good gains until three or four weeks after the plants begin to grow.

Then, as you know from experience, early spring is the time when big storms are likely to happen. Those storms may cause some losses. And there are the poisonous plants. The danger from them is worse, because loco, and larkspur, and death camas are among the earliest weeds to start on the range. And the livestock are tempted to eat more of them, if other feed is short.

Yes, if you are thinking about turning the livestock out as soon as the first blades of green grass come up, think again. Put off

grazing for a few weeks. Avoiding the early spring losses will more than offset the extra cost of feeding a few weeks longer this spring.

You know the United States Forest Service men have been studying the spring range problem for several years. Their studies show that continued early grazing will do as much damage to the range as continued overgrazing.

If you delay grazing until the forage plants have made good growth in the spring, the range will hold up better and produce more forage -----(As if interrupted) --"How high?" ---You mean, How high should the grass be -- before you start grazing?

Well, for most mountain or foothill ranges, where bunch grasses predominate, the important plants should reach a height of about six inches before grazing begins. They usually get that high by about four weeks after they start growing in the spring.

Four weeks is also enough usually for the shorter grass ranges. Given that four-weeks headstart, the forage gets going so it grows faster than it is grazed off --- provided, of course, that the range is not overstocked.

When livestock are turned on range just after the growth starts, there's so little green feed to be had, the animals keep the feed grazed off as fast as it grows.

Not only that, but too early grazing is apt to result in heavy trampling before the soil gets dried out properly. When the soil is wet, there is a lot of damage done. The roots are broken and plants are crushed into the ground. Then too, the soil may be packed, so it dries out too fast, and doesn't take up moisture from the rains later.

Now an ideal arrangement for a ranch is to have the proper amount of range for use each season of the year.

That means having enough early range to carry the stock until the higher, later, summer range is ready for grazing.

As a rule, you can use the early spring range again in the fall. That is, after you take the stock off summer range and before you put it in the feed-lot or on winter range.

That spring-and-fall range is usually located in the foothills and rolling country between the high summer grazing and the semi-desert winter range. Spring-and-fall range is needed for two or three months in the spring and about the same length of time in the fall.

The trouble is, though, that good spring range has become pretty scarce in many parts of the country. In the early days there was probably plenty of it. However, a lot of spring range land has been put under cultivation in recent years. A lot more has been badly overgrazed. It is now far below its original carrying capacity.

That's true of public-owned as well as private lands. On the National Forest ranges, they have put off the opening of the grazing season as a matter of range protection.

Yes, there are no three ways about it. We have either got to have good spring range or we've got to stand the cost of extra feeding.

If you keep on grazing summer range too early -- or any other range, for that matter,-----you will cut down the carrying capacity of the range.

Forest Service officers see two ways to go about solving this spring range problem. One is to improve the range we now have. And the other is to establish improved permanent and temporary pastures for spring use, especially on irrigated land.

Pastures like that can carry a good many head of cattle. True, they are expensive to start. Once started, however, they should pay their way. The Colorado Agricultural College has had good results sowing "Morton's Mixture" for spring pasture. Temporary pastures, such as winter rye, have also been tried out successfully. Where there's plenty of water, such pastures should produce a good crop of hay, besides several weeks grazing.

As for improving the spring range, that means conservative stocking, or rotation grazing, or maybe even giving the range a complete rest for a few years until the forage crop has a chance to come back. Possibly, it might mean reseeding, artificially. Of course, in that case, extra feeding will be needed for a few years. But that would be more than made up by the bigger carrying capacity in later years.

ANNOUNCEMENT: The next meeting of the Farm Forum will be next Monday, when we will consider the care of ewes at lambing time. Tuesday, we'll talk about feeding chicks. Wednesday we'll have up some market question. Thursday, we'll discuss butter making on the farm, and Friday our Farm Engineer has agreed to tell us how to get the most of the tractor.

9
Fn 37a THE FARM FORUM

Mon. March 18, 1929.

NOT FOR PUBLICATION

Livestock Meeting No. 25: Care at Lambing Time.

ANNOUNCEMENT: The Farm Forum will be in order! -- Those of us who raise sheep naturally want to raise them right. For that reason, we thought it a good idea to have a sheep specialist here from the U.S. Department of Agriculture, to give us a few pointers ----- All right, Mr. Expert -----

As sheepmen, on what do your profits depend?

They depend on the size and quality of your lamb crop, don't they? A big crop of good lambs, means more money, doesn't it? A small lamb crop means less money, doesn't it? And if that small crop is also a poor crop, you will have to take mighty good care of it, if you make any profit at all. Isn't that so?

That being the case, I don't have to tell you men that it is especially important to give extra care to the ewes and lambs at lambing time. Lambing time is your harvest time.

Never feed ewes heavily on grain just before lambing. And just before lambing, put the ewe in a separate pen. Farmers' Bulletin No. 810 on "Equipment for Farm Sheep Raising" shows you how to build two light panels fastened together with a hinge for setting in the corner of the pen.

With panels like that, the ewe can see the rest of the flock. That'll keep her from getting excited and nervous. Then too, those panels prevent the other sheep from trampling on the lamb. They give the ewe a chance to get acquainted with her lamb at the start. In that way, there won't be so much danger of her disowning the lamb later.

Of course, those lambing pens should be in a well-ventilated room; one that is free from drafts and as warm as you can make it without artificial heat. If the weather is very cold, it is a good idea to throw a blanket over the lambing pen. That will help keep enough heat up to give the lamb a good chance the first few hours. And remember, those first few hours are most important.

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True, a lamb born strong and vigorous, with a good mother, will need very little care. But in cold weather, lambs may get chilled. They may die if you don't warm them up promptly -----(As if interrupted)
---- What? ---"How?" --- How would I warm them, you mean?

Well, one good way is to wrap the lamb in hot flannel cloths. Put on new ones as often as they're needed. Another way to warm a chilled lamb, is to put it in hot water a few minutes. Then take it out and dry it with cloths and wrap it up for an hour or two in fresh cloths or a sheepskin until the lamb is thoroughly dry. Use water as hot as the hand can bear.

In any case, get the lamb back to the ewe and let it nurse as soon as possible. If it won't nurse, use a baby's bottle and nipple.

And if, for any reason, a lamb is left an orphan, you can raise it by bottle feeding. Whole cow's milk or goats' milk is commonly used. If possible, however, when the lamb is very young you should feed it milk from ewes which have also lambed recently.
-----(As if interrupted)----- How's that? --- "How much?"

Well, for the first two days, feed the lamb one ounce every two hours. After the first two days, you can change to the cows' or goats' milk without any trouble. But the milk should always be fed from sterilized bottles and at about body temperature ---- that is, about 100 degrees.

Feed a little at a time, but feed often. Best results come from feeding once every four hours for two or three weeks. Gradually increase the feeding from two to six ounces.

By the time they are three weeks old, the lambs should be nibbling some hay and grain, such as bran, or rolled oats or cracked corn. Then you can begin gradually increasing the time between feedings, until it is eight hours between feedings and the amount fed has been increased to one pint.

And, as I say, well-fed lambs from well-fed ewes have few troubles. However, some troubles are to be expected in any flock.

Ewes which have lambed should be kept in the lambing pens for from one to three days. Then turn them into a pen by themselves, where you can give them special care and special feed.

After lambing, feed the ewes lightly at first. Put them back on full feed about the third or fourth day. And remember, it is good business to feed heavily enough to produce a large flow of milk for the lambs. Heavy-milking ewes can make good use of from 1 to 2 pounds of grain a day.

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However, experiments at the Wisconsin Experiment Station, show that when ewes are on good pasture there is no extra gain made by the nursing lambs when the ewes are fed grain. -----(As if interrupted)-----
What say? -----"Scours?"

You can cure scours best by giving one-fourth of an ounce of baking soda and one ounce of sulphate of magnesia and a pinch of ginger in a small quantity of flaxseed tea or gruel. Follow that in about four hours with two ounces of linseed oil. -----
(As if interrupted) We have another question over on this side -----
What's yours? --- Indigestion?

Yes, lambs are subject to it and you can tell they have it when they show distress and froth at the mouth. A good liberal dose of castor oil will usually cure indigestion.

Another thing which is rather common is sore eyes. Use an eyewash of silver nitrate or 15 per cent argyrol for that. A few applications will clear up the trouble, or you might use a very little drop of pure sheep dip.

Sheep dip or a medium strength solution of copper sulphate is also good for sore mouths. Rub off the scabs and put on the dip or copper-sulphate solution.

And I advise any of you men with whom sheep raising is something new, to get that Farmers' Bulletin No. 840-F on Farm Sheep Raising for Beginners. You will get a lot of good information out of that.

ANNOUNCEMENT: Any one who wants that bulletin can get it free of charge by writing to Station ----- or by writing direct to the United States Department of Agriculture. It is Farmers' Bulletin No. 840-F, and is called "Farm Sheep Raising for Beginners." Now that bulletin on equipment for Farm Sheep Raising is Farmers' Bulletin No. 810-F. That's what it is called, "Equipment for Farm Sheep Raising." Of course, it is also free for the asking.

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★ MAR 13 1929 ★

U. S. Department of Agriculture

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In 37A
THE FARM FORUM

Tuesday, March 19, 1929.

Poultry Meeting No. 25:

Feeding Chicks.

ANNOUNCEMENT: The Farm Forum will be in order! -- The subject for discussion today is the feeding of chicks. We'll ask the poultry specialist from the U.S. Department of Agriculture to start the discussion ---- All right, Mr. Specialist, suppose you tell us what to feed ----

Well, it is a good idea to have both milk and green feed in chick rations. Supply the chicks with milk in some form if you possibly can. It doesn't matter what kind of milk. You can use dried milk in the mash. Or you can keep milk before the chicks as a drink.

If they have outside grass range, they will get plenty of green feed. In case yours don't get out on grass range, better put some green stuff in the feed. Alfalfa leaf meal in the mash will give them part of the green they need. But it is also a good idea to feed cut cabbage or sprouted oats. Those feeds will keep the chicks busy and sharpen up their appetites.

I'd advise you to start your chicks on a mash. After the first week, you can add chick grains to the ration. Or, you can keep on feeding the mash by itself for the first three or four weeks----- I'm just giving you members a few general pointers, but if there is anything special you'd like to ask about, don't hesitate to ask. I don't want to monopolize the meeting, and then not give you what you want ----- Ah, there's a hand up! ---- Did you have a question? ----- "A good baby chick mash?"

Yes, certainly. If you want a good baby chick mash, try this one: (Slowly) Four parts, by weight, of yellow corn meal; two parts rolled oats; two parts bran; one part dried milk; and one-fourth part sifted meat scraps.

I see some of you taking that down. I'll repeat it, so you can be sure of getting it right.--Are you ready? (Slowly) Four parts, by weight, yellow corn meal; two parts rolled oats; two parts bran; one part dried milk; and one-fourth part sifted meat scraps.

That's a good baby chick mash. Feed it four or five times a day for the first week or ten days. You can use hard-boiled infertile incubator eggs in the baby chick mash. In that case, just use the same mash I just gave you, but cut the amount of meat scraps and milk down half and use the eggs instead. Or if you have enough of those eggs, you can leave off the meat and milk altogether. Just use one part boiled eggs to three parts of mash. ----(As if interrupted) What say? ---- "How often should you feed it?"

Feed that chick mash four or five times a day for the first week. Use flat pans or troughs the first week or two, until the chicks are big enough to eat out of reel hoppers. That reel type of hopper keeps the mash clean and prevents the chicks soiling the feed. I always use that kind after the first week or two. Always be sure to give the chicks plenty of hopper space so they can eat without crowding.

Now when the chicks are ten days to two weeks old, you can change the mash to this one -- take it down:

(Slowly) Eight parts, by weight, yellow corn meal; two and a half parts bran; two parts middlings; two parts rolled oats; two parts meat scrap; one and one-half parts dried milk; one part bone meal; one part alfalfa leaf meal; and one-fifth part salt.

Did I go too fast? -- All right, it may be a little hard on some of you to listen, but I'll just repeat that: Eight parts yellow corn meal --- and be sure it is yellow corn meal. Yellow corn meal has vitamins in it while other corn meal is short in that respect.

As I said, eight parts yellow corn meal; two and a half parts bran; two parts middlings; two parts rolled oats; two parts meat scrap; one and a half parts dried milk; one part, bone meal; one part alfalfa leaf meal; and one-fifth part salt.

Keep that mash before the chicks in hoppers. Then two or three times a day also feed finely cracked grains or commercial chick feed. The chick grains may be made of two parts finely cracked corn and one part cracked wheat.

When the chicks are seven or eight weeks old you can use two parts ordinary cracked corn and one part whole wheat, and feed that scratch grain only twice a day.

And you'd better feed all the grains and scratch feeds in shallow troughs. That is to keep the feeds clean, and the chicks clean. -----
(As if interrupted) How's that? --- How about commercial feeds?

Yes, where only a few chickens are kept, it is easier and more satisfactory to buy both the commercial mash and the commercial chick and scratch feeds. Commercial chick feeds are used extensively in feeding baby chicks. And they give good results. Ordinarily, it doesn't pay to buy finely cracked grains for home mixed rations for baby chicks even when you have a good sized flock. The mash ingredients, however, are easier to get. -----(As if interrupted) Yes? --- "Cod-liver oil?"

Oh, yes. Where chicks get little sunshine, I'd add cod-liver oil to the mash to prevent leg weakness. Use two per cent of a tested brand of cod-liver oil. But don't mix more than two weeks supply of mash with the oil. Mix the oil with a little of the mash and then mix that mixture with the main batch of feed.

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And remember, please, how to feed is nearly as important as what to feed. Regular feeding is very important. The chicks should be ready for each feed. But don't let them get too hungry. Chicks which get too hungry may start bad habits, such as toe and feather picking. And during the first two weeks be careful not to overfeed the chicks.

Of course, you know, chicks shouldn't be fed until they are 48 to 60 hours old. They absorb part of the yolk just before hatching and that furnishes the rations for the first 48 to 60 hours. But when you put the chicks in the brooder, feed them and give them water. Otherwise they may fill up on litter. Keep them in the chick shipping boxes or in the incubator until they are old enough to be fed.

Give chick-size limestone grit or fine oyster shell with the first feed, and keep it before the chicks all the time. The same goes for water. Chicks need plenty of fresh water before them all the time. Supply the water in a container which can be kept free from litter and which will prevent the chicks getting wet. Don't forget that clean water all the time is essential to successful chick raising.

ANNOUNCEMENT: Tomorrow we will have up a few market questions on some of our principal products. Thursday we'll take up the question of making butter on the farm, and Friday, we have the Farm Engineer in to tell us how to get the most out of the tractor. This time next week, however, will be our regular poultry day and we will discuss the spring management of the laying flock.

9
In 37a
THE FARM FORUM

(Region 1)

Wed. March 20, 1929

NOT FOR PUBLICATION

Crops and Soils Meeting No. 25a: American Rye Markets

ANNOUNCEMENT: The Farm Forum will be in order! ----- Today we have a grain market expert with us from the U.S. Department of Agriculture. He is going to tell us about rye ---- He is going to give us a general view of the production and marketing of our rye in relation to the rye grown in other parts of the world. Maybe he'll tell us what makes the prices for rye ----- All right, Mr. Specialist -

Certainly, I'll tell you what makes the prices for rye.

Our domestic prices are largely determined by the supply of rye and wheat in other countries.

When you consider where most of the world's rye is raised, it isn't hard to see why that is.

Our rye belt here in the United States extends across the lake states about 300 miles north of the winter wheat belt. Of course, unimportant amounts of rye are grown south of that, but that is produced mostly for forage.

The chief rye producing states are North Dakota, Minnesota, Wisconsin, Michigan, Nebraska, and South Dakota. Add Pennsylvania, Indiana, Illinois, South Dakota, Montana, Colorado, and North Carolina and you have the States which produce over 80 per cent of the rye acreage in the United States.

Our mills in this country take the best types of rye to make flour. The poorer grades go abroad.

Now, before the World War, our exports didn't amount to much. We grow but a little over two per cent of the world's rye. Before the World War, about 95 per cent of the world's rye crop was grown and eaten in Europe. Russia, Germany, and Austria produced about 83 per cent of the world's crop. In fact, Russia alone produced considerably over half of the world's crop.

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As I said, we were not exporting much. Russia, Germany, Poland, Czecho-Slovakia, Austria, Scandinavia, Finland, the East Baltic States, Belgium, and Holland all raise more rye than they do wheat. What we export goes either directly or indirectly to countries which are themselves big producers of rye.

When the World War came, particularly after 1915, when the allies couldn't get their usual amount of rye from Russia, the world's greatest producer of rye, they turned to North America for supplies of rye. Our rye exports jumped immediately. They kept going up during the war. Since 1920-21, however, they have tended to go down. In 1922 and 1924 there was a shortage of bread grains in Europe and Russian exports of rye were at their lowest ebb.

Considering the smallness of our crop, before the World War, distillers in this country took substantial amounts of our rye to make alcoholic beverages. Prohibition practically wiped out that demand. So you see, at the same time our foreign demand was increasing and home demand was decreasing. The export market has become more and more important as an outlet for our rye.

Remember, however, all this time the world has not been eating any more rye. Remember, the world's total production has been practically at a standstill for many years. The changes in production have been caused by different people growing and marketing rye. As production and exports have fallen off in one country, they have increased in another.

Now then, what of the future? The big question in the future market situation for rye as it will be for wheat is whether or not Russia comes back in the export field.

Since 1922, our rye acreage has gradually declined but our exportable surplus has been moving comfortably into European importing countries. But that is largely because of the delay of Russia in re-entering the export field.

Then too, trade reports indicate that rye shipped into Europe from the United States has been of disappointing quality to the importers. In many cases, American rye has sold for five to six cents a bushel less than European grown grain. Although the average of our rye may be just as good quality as ryes produced in Russia, Poland, and the Danube countries, our better grades of rye are kept in this country, because of the premiums paid by our home mills. It is mainly our lower grades which go into export channels.

So you see, the market for our rye depends not only on the quantity of rye in other countries but also on the quality of our rye and the rye with which it must compete in Europe. -----(As if interrupted)

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Just a moment ----- The man over here has a question ----- Now -----
How about Canada?"

Well, the type of rye produced in Canada is much the same as that grown in the United States, although the average yield is a little heavier. On account of the bulk of the Canadian acreage being placed in wheat, rye hasn't reached the position it occupies in the United States as a rotation crop or for forage.

Of course, the World War stimulated the planting of rye in Canada as it did in the United States. Production has followed much the same course as in this country.

Feeding rye to domestic animals is probably carried on to a greater extent in Canada and Canadian distilleries also provide a further home outlet for Canadian rye. However, the Canadian demand for both those uses won't take care of any appreciable amount of the total crop. The bulk of the crop will undoubtedly continue to be offered in competition with other exporting countries. -----
(As if interrupted) You have another question? --- Yes? -----
"South America?"

Oh, no. Not much chance of competition from South America. Some parts of the southern hemisphere are adapted to growing rye. Argentina, in particular, could raise a large amount of rye; but she is not likely to do it. There is little domestic demand for rye down there. Countries in that part of the world will probably keep on cutting out the growing of rye in favor of wheat.

No, the big factor in the world's rye market is Russia. Although Russia lost some rye producing territory in the Baltic region, she still produces about one-half of the world's rye crop. Prices for American rye in the future will largely depend on how much rye Russia exports and, to some extent, on the quality of the rye we export.

ANNOUNCEMENT: At tomorrow's meeting of the Farm Forum we'll talk about making butter on the farm. And Friday we'll have the Farm Engineer to show us how to get the most out of the tractor. Then next week we'll have an important meeting to discuss livestock troubles on Monday and another on Tuesday to take up the spring management of the laying hens.

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★ MAR 13 1929 ★

U. S. Department of Agriculture
Wednesday, March 20, 1929.

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In 37a
THE FARM FORUM

(Region 2)

Crops and Soils Meeting No. 27c: Fruit and Vegetable Standards.

Reading Time: 9 Minutes.

ANNOUNCEMENT: -- Come to order, men! ---- Our old neighbor, who is now a marketing specialist with the United States Department of Agriculture is going to talk to us about the Federal Standards for fruits and vegetables. You who know him know he "knows his onions" -- and his other vegetables --- from below the ground, on up -----

Speaking of standards of fruits and vegetables, I wish you could have heard us laugh at old Joel Scott. A few of us were sitting around the stove, as I remember it. It was down at Tompkins' store, fourteen years ago and we were having a more or less serious discussion. But when things drifted around to marketing vegetables, and old Joel suggested that we would some day have Federal standard grades for such things as fresh vegetables and fruit, we certainly did laugh at him.

The idea of Federal grades for such perishable stuff seemed downright foolish. In fact, up to ten years ago, the United States Department of Agriculture had recommended grades for potatoes and Bermuda onions -- but that was all.-----But now see what's happened. At present there are U.S. grades for over 40 fruits and vegetables. And they are all being used in practical commercial operations. Now it is almost a safe prediction that in ten years more, most of us will have forgotten that business was not always transacted on the basis of national standards.

It is not surprising that we have done so much toward standardization of fruits and vegetables, when you consider the conditions. The farm value of the 28 important fruits and vegetables in the United States is now well over a billion dollars. The trend has been to centralize production of many of our chief fruits and vegetables in parts of the country far from the markets. Since the big markets have been filling their needs without regard to distance, there has been a special need for studies of the preparation of crops for market and standardization of

grades. ----- (As if interrupted) Well ----- Yes, I'm always glad to answer questions ----- (Pause as if for question)

Well, the two chief advantages of standardization are, the advantages of a common language between the buyer and the seller and the advantages of actually sorting the product into different grades of market quality.

Sorting the product into different market grades is especially important in cooperative associations. It gives a basis for pooling the products of various growers so that all may share alike in the season's pool. Actual sorting also makes for better distribution. By 'better distribution' I mean finding the market which will give the farmer the biggest return for his product. To find that market involves reaching the widest territory which transportation costs and the perishability of the product will permit. Finding the best market also involves extending the market season, so as to allow the most time to get rid of the crop; and conforming to trade preference, so as to meet the broadest range of consumer demand; and keeping down the distributor's share of the profits.

The necessity for a common language is very evident. Standard grades which mean the same to both buyer and seller make dealing practical on the basis of future contracts, long range buying and selling, the settlement of claims, and the intelligent comparison of market prices.

In fact, it was the need for a basis of intelligent comparison of market prices which started the present national standardization of fruits and vegetables. In the process of establishing its telegraphic market news service, the Department of Agriculture found the need for a uniform basis of quotation, and so, in 1915, began the study of national standards of fruits and vegetables.

In 1918, the U.S. grades for potatoes were issued jointly by the U.S. Food Administration and the Department. During the war, the use of these grades was practically universal. And now, although there is no national authority to require the use of Federal Standards, they are still the only well-recognized grades in use.

The biggest boost to standardization was the establishment in 1917 of a Food Products Inspection service in the big receiving markets of the country. In 1922, inspection of perishables was extended to the point of origin.

Some of you probably know how that service works. Under the law, The Department of Agriculture is authorized to certificate the quality and condition of fruits and vegetables and certain other farm products when received in the terminal markets, or when offered for sale in interstate shipments. In practically all the leading markets, there is a staff of trained inspectors; and, either independently or in cooperation with state agencies, licensed inspectors under close supervision handle the inspections at the point of origin.

Certificates are issued by these inspectors regarding the quality,

size and condition of the product, with a description of the condition of the car and equipment, and method of loading, and so forth. Those inspection certificates are accepted as prima facie evidence in all Federal courts, and in some state courts. The certificates issued under joint authority of State and Federal Departments are usually receivable as prima facie evidence in the states where they are issued. You can all see the value of such documents in connection with sales at long range and as a basis for future delivery. They are also used extensively in fixing the responsibility for deterioration in transit.

As long as products were placed on cars and shipped to distant markets without inspection, they were subjects of controversy when they reached their destination. We are often inclined to think we have been treated unfairly. But with the establishment of this inspection service at shipping points, many of us come in direct contact with the inspectors. Where our stuff fails to make the grade, we get an explanation as to why. I know a number of cases, in which knowing the exact reason why products were found below the acceptable standard of market quality has stimulated the grower's interest in better methods of production. Such education is one of the best effects of the inspection service.

Of course, you understand, the use of the Department's inspection service is entirely optional. The inspection is made for a fee which will as nearly as possible cover the cost of the work. Last year over 210,000 cars of fresh fruits and vegetables were inspected largely on the basis of these optional Federal grades. The whole development of national standards for fruits and vegetables has been by educational means and in connection with commercial operations.

National and local farmers' organizations, banks, warehouses, crop insurance companies, educational institutions, and the trade in general, indorse the policy of standardization. For that reason, a tremendous pressure for improved practices is being brought on the more backward communities.

ANNOUNCEMENT: At tomorrow's meeting of the Farm Forum we'll talk about making butter on the farm. And Friday, we'll have the Farm Engineer to show us how to get the most out of the tractor. Then next week we'll have an important meeting to discuss livestock troubles on Monday and another to take up spring management of the laying hens on Tuesday.

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U. S. Department of Agriculture

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THE FARM FORUM

(Regions 4 and 5)

March 20, 1929.

NOT FOR PUBLICATION

Crops and Soils Meeting No. 25: The World's Greatest Bread Grain.

ANNOUNCEMENT: The Farm Forum will be in order! --We have with us a market specialist from the U. S. Department of Agriculture. He will now tell us about the world's greatest bread grain. In other words, he is going to tell us about wheat; who grows it, and where it is used, and just where we fit in the picture -----

The world uses a lot of wheat.

If you could load all last year's wheat crop on the cars, you would have a train which would stretch -----

Well, let's say, we load it all on regular-size freight cars. Make those cars up into trains, fifty cars to the train, with an engine on one end and a caboose on the other. Let the cow-catcher on the engine of every succeeding engine run right up to the back-end of the caboose of the train before it. All right. At that, to hold all last year's wheat crop, you would need enough of those fifty-car trains to stretch 30,000 miles. That is enough to fill ten straight tracks from New York to San Francisco without room to turn a wheel. There would be 3,750,000 freight cars in those trains.

That gives you some idea of the tremendous size of the world's wheat crop. Nearly every important country in the world produced some of that wheat. But the United States produced more of it than any other country. Last year, we grew nearly one-fifth of the world's harvest. Russia was probably the next biggest producer. Canada and China ran a close race for third place.

Canada produced about one-tenth of the world's crop. China probably grew that much or more--- but we don't have very good figures on China's production. India comes next. Then Argentina.

In Europe, France, Italy, Spain, and Rumania are all wheat growing countries. Over one-fourth of the world's wheat crop was grown in Europe last year. Australia also grows a big wheat crop, ranking right

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along after France and Italy.

Now, of course, you all understand that not all the wheat grown in the different countries is used where grown. In many of the countries of Europe, the home-grown crop is not nearly big enough to meet their own needs. That being the case, they have to import wheat from some of the countries which produce more than they need. Taken as a whole, Europe imports more wheat than any other part of the world. China and other Asiatic countries import a great deal of wheat also.

Now, let's look around and see what countries grow more than they need. Let's see what countries supply the wheat to the lacking countries.

At the head of the list stands our neighbor Canada. In recent years, Canada has exported more wheat than any other country. Our own country comes next. Argentina ranks third. And Australia fourth. India usually exports some wheat and there are several European countries which have a surplus they ship to neighboring countries which do not grow enough to meet their home needs -----(As if interrupted)
--- What's that? ----- "How about Russia?"

Well, Russia exported a lot of wheat before the World War. Since that time, she has hardly had enough to meet her own needs. In fact, Russia has imported some wheat or flour in recent years.

But remember when we speak of the world's wheat crop, we are talking about several different kinds of wheat. Different kinds of wheat have different uses. Some is made into flour that is best for bread. Other kinds make flour better suited for pies and cakes. Still other flour is needed to make macaroni.

Let's take the crop in the United States, for instance. The hard red winter wheat grown mostly in Missouri, and Nebraska, and Kansas, and Oklahoma, and Texas, and the hard red spring wheat produced mostly in Minnesota, and North and South Dakota, and Montana are used chiefly in the manufacture of flour for bread making. On the other hand, the soft red winter wheat grown in Pennsylvania, Maryland, Virginia, Ohio, Indiana, Michigan, Illinois, and Kentucky produces flour best suited for pies, cakes, and other pastries; although it is also used to quite an extent locally for bread making.

Then there is the flour from which macaroni is made. It is produced principally from durum wheat grown in the United States; almost exclusively in the four States of Minnesota, North and South Dakota, and Montana. On the Pacific Coast, both soft and hard wheats are grown.

Now, as you know, here in this country we use wheat for flour, for breakfast foods, and for seed and feeds. But we don't use all we grow. As we said before, we are big exporters of wheat. In recent

years, we have exported from one to two hundred million bushels of wheat a year.

Almost all our hard red spring wheat we use or mill right here in the United States, although we send some of the flour abroad. Most of the soft red winter wheat is also used for milling here at home. In fact, our crop of that class of wheat hasn't been big enough to supply our own mills.

So you see, our exports largely come out of the hard winter and durum wheat, together with some of the wheats grown in the Pacific Northwest.

The surplus hard winter wheat we don't need in this country, we ship mostly to the British Isles and Europe, although Mexico takes fairly large amounts.

The outlets for our surplus durum wheat are more limited than the outlets for hard winter wheat. Italy and France are about the only important buyers. They use our durum wheat to make macaroni. Nowadays, much more durum wheat is going into macaroni here at home. Instead of our buying macaroni from abroad, our macaroni makers are not only supplying most of our home trade, but are competing with Italian and French manufacturers in foreign markets.

Our wheat exports from the Pacific coast go partly to China and other Asiatic countries and partly to Europe. However, they meet competition from Australian wheat in the Orient. And in European markets they come into competition with Canadian and Argentine wheat.

So you see, the markets for our surplus wheat often depend a great deal on crops grown far away from the countries in which we sell.

ANNOUNCEMENT: Tomorrow we will take up the question of butter making on the farm and Friday our Farm Engineer will show us how to get the most out of our tractors. This time next week, we will have a meeting to talk alfalfa and the time to cut it.

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★ MAR 13 1929 ★

U. S. Department of Agriculture

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THE FARM FORUM

Thursday, March 21, 1929.

NOT FOR PUBLICATION

Dairy Meeting No. 25:

Making Butter on the Farm

ANNOUNCEMENT: The members will please find seats. The Farm Forum is in order! --- We'll open our meeting today with a talk by a specialist from the U. S. Department of Agriculture. He is going to tell us how to make and store butter for farm use ----- Go ahead, Mr. Expert ----

Mr. Chairman --- Ladies and Gentlemen! --- I'm glad to see so many ladies present. From a remark I heard one of you make as you were coming in the door there, it is important that you should be here.

"I put up some butter last summer," I heard the lady say, "but when I came to use it, it was so strong and rancid nobody could eat it."

Now, that should not have been. I mean, the butter shouldn't have been rancid ----- Of course, on many farms around here it is a first-rate idea to put away some of the surplus summer butter to use during the late fall and winter, when production is often not big enough to supply the family with butter.

But what's the use of putting up butter if it is not going to keep? A few years back there might have been some excuse for failure in making farm butter for winter use. Now, however, we know the sourness of the cream has a good deal to do with the way butter keeps in storage. We know now that the best-keeping butter is made from sweet, pasteurized cream; from cream that is churned without being ripened or soured in the least ----- (As if interrupted) --- "How sweet?" did you say?

Perfectly sweet. That is, the cream should be sweet enough so it won't curdle when you put it in hot coffee.

I can tell you how to make and keep summer butter for winter use in a very few words:

First and foremost, make the butter from Pasteurized sweet cream. Second, churn at a low temperature. Third, wash out the buttermilk thoroughly.

And remember, please, all butter-making utensils and crocks should be cleaned with a dairy cleanser. Then they should be well rinsed with boiling water a short time before you use them.

Now then, work the butter only moderately. Then make it into rolls and prints. Wrap the rolls or prints of butter in parchment paper. Pack the wrapped rolls in crocks. Fill the crocks with a strong brine. Then keep the crocks of butter in the coolest place possible. ----- (As if interrupted) How's that? --- "How strong?"

Make the brine one part salt to three parts water. And remember it is always better to use too much salt than too little.

Pack the rolls of butter in big stone crocks, and be sure that the brine is over the top of the butter. If the rolls are not packed in tightly some of them may float. If they do, weight them down. The butter should be entirely submerged in the brine.

You'll find that if you get the rolls of butter well submerged under a good strong brine, they will keep very well. They will keep very well for months and months. There may be some stale flavor; but if you have made the butter right and packed it right, there won't be any strong or rancid flavor. -----(As if interrupted) The lady over here has a question ----- What is it, now? --- "Just how much should you work the butter?"

Well, as I said, work it only moderately. After you have added the salt, work the butter just enough to get the salt distributed evenly through it. Too much working destroys the waxiness of the butter and makes it like salve. Not only that, but too much working injures the keeping quality of butter.

Yes, when making butter in the summer for fall or winter use, it is especially important to have it come firm enough so the body will be waxy. At the proper temperature butter granules come firm but not hard. That makes it easy to wash out the butter milk.

Stop churning when the little grains of butter are about the size of kernels of wheat. If you keep on churning until the butter is in big masses, you won't be able to wash out the buttermilk. Too much buttermilk in butter, you know, causes bad flavors to develop. ----- (As if interrupted) "How long?"--

Well, it usually takes about 30 minutes' churning. When the churning temperature is such that it takes 30 minutes or longer, more of the butterfat is churned into butter and less goes into the buttermilk, than when it takes less than 30 minutes' churning. And that's especially true with sweet cream.

By using a thermometer to take the temperature of the cream at churning time, it is an easy matter, after a few churnings, to tell just what temperature gives the best results.

You should also take the temperature of the wash water with a thermometer. If need be, add warm or cold water to make it right. Usually the temperature of the water should be about the same as that of the cream you are churning. If the grains of butter tend to be soft or too hard, however, you can use wash water a little cooler or a little warmer to correct the trouble. Warm wash water has the same effect on the body of the butter as a high churning temperature.

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Use only pure, clean water. Use twice as much wash water as you had cream. After you have drained off the buttermilk, pour half the wash water in the churn. Put the cover back on and give the churn about four fast turns. Then draw off the water, and pour in the other half. Two washings should be enough. And if you use proper temperatures and do as I've indicated, the butter should be still in little grains and have very little buttermilk in it --- (As if interrupted) What's that? ----- Repeat what? --- The whole thing over again! ----- Don't think I'd better. That would be too hard on the others --- But I tell you, why don't you take a copy of this United States Department of Agriculture Leaflet Number Nine. That leaflet describes the making and storing of farm butter for winter use. It twlls you all I have told you, and maybe several things I've left out.

ANNOUNCEMENT: Making butter fine and packing it in brine is all set down in Leaflet Number Nine-L. If you want that guide to good farm butter you can have it for the asking by simply writing to Station_____ or by writing direct to the United States Department of Agriculture at Washington, D. C. Ask for leaflet No. 9-L on "Making and Storing Farm Butter for Winter Use."

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In 37a
THE FARM FORUM

Friday, March 22, 1929.

Farm Engineering, Meeting No. 25:

How to Get the Most from
the Tractor.

ANNOUNCEMENT: The Farm Forum will be in order! --- Is our Engineer in the house? ---- Come on up here, Mr. Engineer --- This meeting is stalled -- We want you to start it up by telling us how to get the most out of a tractor ----- Give me your hand here, and I'll help you up. -----

Well, I was driving down the road the other night --- I was coming from a meeting like this. It was late. But there coming walking down the road by himself was a man. Just as the car passed, I recognized him. He was a friend of mine.

Of course, I yelled at him. I asked him where he was going. He said he was looking for a telephone. He wanted to call up a service station. His automobile refused to run and he wanted somebody to come see what was the matter.

I told him it was quite a ways to the nearest phone, but if he'd get in with me we'd go on to his car. "Maybe between us," I said to him, "we may be able to figure out the trouble."

Well, sir, that was just politeness on my part; for he didn't know a thing about his engine. In 30 seconds' time, I had it going. I just gave the circuit-breaker point a half turn and that engine was in perfect running order.

That's the way a lot of men are with tractors. I suppose all of you here have had similar experiences to that. You have known cases of tractors stopping in the field or automobiles stalling on the road, and a mechanic being called out from town several miles away. Then when he got there, he fixed things in a minute or two by some minor adjustment of the ignition or the carburetor.

I've seen a surprising lot of that sort of thing. And another thing, you have seen too, is one of these fellows who tinkers around with the engine hoping he may accidentally fix it or get it started. He doesn't know what he is doing, but he keeps doing something. Likely as not when he gets through there are a number of things out of adjustment.

Now a farmer can't afford that sort of monkey-foolishness. Nowadays he has to depend a good bit on gasoline engines, and tractors, and trucks. He can't afford to have all the work held up while he gets a man out from town to locate the trouble. ----- (As if interrupted) ----- What's that? --- "Every farmer is not an expert gas engine man."

Of course not. He doesn't have to be. But he has got to know more than just enough to supply the tractor with gasoline, and oil, and water.

I know some of you think of a tractor engine as being something terribly complicated. Some think there is no use trying to learn. But as a matter of fact, the construction of a tractor is comparatively simple. Any man here can understand how a tractor works, if he will put his mind to it, and make a careful study of it.

Tractors and other such machines have been developed to a high state of perfection these days. They have been simplified. The lubrication is more certain now. Parts are less subject to wear.. Fewer troubles develop. There are fewer adjustments needed than in the old days. Even so, there are still many things about the tractor which in time will need attention of some kind. We used to blame everything on the engine. Nowadays engines are so dependable under proper care that most often in the words of Shakespeare, "The fault is not in our engines, but in ourselves, that we are under-the-things," so often. We just don't know our engines.

And not only should you be able to locate the trouble when the tractor won't run, you should also be able to detect warnings of troubles which are developing, such as loose bearings, and leaky valves, and improper lubrication, and the like.

As the saying goes, an adjustment in time saves nine. And a little adjustment in time saves one ninety-nine times as big -- and expensive. Many troubles attended to in time are only a matter of slight adjustment. Without attention, they develop into serious troubles. They may mean expensive repairs and delays. You pay for not knowing.

For instance, a loose connecting rod bearing at first may be easily tightened and give no further trouble. If it is not tightened, it will gradually get worse. The crank on the main shaft will become flattened. The bearing is likely to be broken. And all that vibration that sets up will have its effect on other parts of the engine and the rest of the machine.

Of course, I can't tell you in a few minutes how to systematically locate the causes of tractor troubles. I can't teach you the functions of the various parts of the machine and how to recognize various warnings and symptoms. It takes more than just reading instruction books or guiding the tractor around the field for that, too.

It is up to you to study the instruction book in connection with the tractor itself and trace the various operations on the tractor. After you have those various things in your mind. After you've thought through many of your simpler questions, a few questions to men who know their engines will be a big help.

And remember the old saying "Experience is the best teacher." But you have to mix judgement with experience or it may prove too expensive. Watch your tractor as she works. Study her. You can learn a lot without any chance of doing any thing wrong.

And if you have to take any machinery apart be careful how you do it. Do it systematically. You may even have to make rough drawings as you disassemble any part of the tractor, so as to be sure to get it back in the proper place and in the proper way. If you don't know the machine thoroughly, don't depend too much on memory.

In general, I'd say to get the most out of your tractor, you must have it in good condition. The man who runs it should be able to make any necessary adjustments on the ignition, or the carburetor, or the governor, or the valves, or the lubricating system. The engine should start without trouble, and should be systematically cared for so as to cut down delays due to lack of fuel, or oil, or water.

The farmer who gets the most out of his tractors, is the man who knows his engines!

ANNOUNCEMENT: Monday's meeting will be on the control of livestock parasites. Tuesday we will look into the management of laying hens in the spring, and Wednesday we'll talk over the relation of the time of cutting alfalfa to the life of the stand.

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U. S. Department of Agriculture

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THE FARM FORUM

Monday, March 25, 1929

NOT FOR PUBLICATION

Livestock Meeting No. 26:

Parasite Control

ANNOUNCEMENT: The Farm Forum will be in order! -- We have with us a veterinarian from the U. S. Department of Agriculture. He wants to tell you livestock men how you can save some money -- or rather how you can make more money, by producing healthier animals - One of the chief ways he claims is to control parasites -----

Are you raising livestock or are you raising livestock parasites, worms, warbles, and lice, and the like?

Livestock and livestock parasites can't thrive well on the same farm. If you raise a big crop of parasites, you are apt to cut down your crop of livestock. Anyway, you'll cut down the profit you make from the livestock.

How are you going to tell about the parasites, you say? Well, of course, most of the parasites are not visible to the naked eye. Some parasites, such as roundworms and liver flukes occur inside the animals or as eggs and young parasites hidden in the pastures. Sometimes you don't realize the condition until the animals get stunted or die, or parasites, such as warbles and mange, are found to be living on or under the skin. If so, they'll cut down the price you get for the hide. Or maybe the losses show in the edible parts of the carcass after it is slaughtered. Buyers have to make allowance for that. They fix the price of stock to make up for the losses they expect on meat inspection. You farmers pay, in the long run. But you can overcome such losses if you pay proper attention to preventing parasites from getting to your stock. Feed costs money. Why feed a crop of parasites?

And please remember, young animals need special treatment. They are much more susceptible to parasites than older animals. They suffer more from the effects of parasitism than full-grown stock. Parasites stunt the growth of young animals, make them thin and weak and bring on a lot of other troubles ----- (As if interrupted) ----- What? ----- "What do I mean?" --- "By 'special treatment?'"

Well, in the first place, keep the young animals away from older ones, except their mothers, of course. Give the young stock clean pastures, preferably pastures which have been sown to a forage crop. So far as you can, rotate your pastures. And, of course, if it is a case calling for medical treatment, call in a veterinarian.

You all know about that work of the Bureau of Animal Industry in McLean County, Ill. That work, which went on for seven years, showed beyond the shadow of a reasonable doubt that with proper attention to sanitation 50 per cent of the losses among pigs can be prevented.

In those experiments, pigs raised on clean pastures were ready for market 7 weeks earlier than those raised under ordinary conditions. And when they reached market age they weighed 28 pounds apiece more than the nonsanitation pigs of the same age. Not only that, but a bigger percentage of the pigs farrowed were raised to market size. Under the new-pasture-for-new-pigs system, 76 per cent of the pigs farrowed are sent to market, whereas, under ordinary conditions of hog raising, only about 50 or 55 per cent of the pigs farrowed ever get to market.

You know, a pasture occupied by one class of livestock tends to get heavily infested with the eggs and grubs of the parasites of that sort of livestock. In time, there may be so many parasites in the pasture that it will be almost impossible to raise thrifty stock on that land.

That's why I say you should rotate your pasture. That old idea of horse-sick farms and sheep-sick pastures wasn't so far wrong after all. Permanent pastures on which animals have been kept year in and year out do often become unfit for that kind of livestock. It is a good idea to bear in mind, in rotating livestock on pastures, that sheep or goats should not follow cattle nor cattle follow sheep and goats. Some kinds of parasites live in sheep and goats and cattle. One may pick them up from the other.

However, it is all right to pasture horses on land which has been used by cattle or sheep or goats because the parasites which attack cattle don't attack horses, and vice versa.

And with a few minor exceptions, the parasites of hogs are not transmitted to cattle or sheep or horses.

It follows, too, that you should not spread manure from stables and yards on pastures which are used by animals of the same kind as those that furnish the manure. If you do that, you may bring about a big infestation with parasites. You may cause serious losses among your livestock from parasitic diseases.

No, the way to dispose of manure, is to plow it under on pastures and sow the plowed land to a crop.

For some parasites there is no need for medical treatment of the stock. For other kinds of parasites, there is no other effective way to control. Medicinal treatment to get rid of parasites cuts down the supply of parasites at the source. It is one of the surest ways to control them.

But before you treat animals, you had better call in a veterinarian and let him tell you what is needed. However, you can all attend to the sanitary end of parasite control. You can prevent spread of many parasites by proper

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disposal of the manure, by pasture rotation, and general sanitation, especially by taking care that the young animals are not exposed to the parasites. The U. S. Department of Agriculture issues Farmers' Bulletin No. 1493-F on "Lice, Mange, and Ticks of Horses," which may be useful to you. Also Farmers' Bulletin No. 1330-F, on "Parasites and Parasitic Diseases of Sheep," should help you protect the health of your flocks.

ANNOUNCEMENT: Those bulletins are free of charge. You can get them for the asking from either Station _____ or by writing direct to the United States Department of Agriculture. The one on lice, mange and ticks of horses is Farmers Bulletin, No. 1493-F. And the one on parasites and parasitic diseases of sheep is Farmers' Bulletin No. 1330-F.

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In 3 Fa
THE FARM FORUM

Tuesday, March 26, 1929.

Poultry Meeting No. 26: Spring Management of Laying Stock.

ANNOUNCEMENT: The Farm Forum will be in order! --- Spring is here--
So is our friend the Poultry Expert from the U.S. Department of Agriculture.
Today he is going to lay down a few principles about management of laying
stock, at this time of the year ---- Go ahead Mr. Specialist -----

Turn off the lights! -----

No, not those here ---- those in the hen house. Those of you who
have been using artificial lights to give the hens a longer working day
during the winter, should cut off the lights, before the first of April.

Artificial lights help a good bit in getting good egg production
during the winter. They are pretty generally used on poultry farms these
days. In most sections, however, March 15th is late enough to use lights.
Anyway, I wouldn't use them after April the first.

Those of you who have had your hens in the houses all winter can let
them out now; as soon as the weather is settled and the ground is dry.
Keeping the hens in during the winter is a general practice on most poultry
farms ----- Yes, I know, the practice of keeping them in the house all
the year around is growing, too. That's being done especially on intensive
poultry farms where the soil has become infected with disease germs.

But for small flocks and in general farm flocks, such as most of you
here have, the chickens will do better if you let them out as soon as the
weather gets settled. Of course, I'm taking for granted that you have clean
ground for them to run on.

With the hens outside, it will be much easier for you to give the house
a good cleaning. Now that spring is coming along it is about time for a
thorough spring house cleaning. Take out that old litter. Clean out the dirt
and dust thoroughly. Put fresh litter on the floor. Provide clean straw for
the nests.

Better examine the hens to see if any insect pests are on them. Treat
the hens with sodium fluoride if need be. Look at the under side of the roosts.
If you find any sign of mites or other pests, paint or spray the roosts with
carbolineum or with engine-oil drainings. -----(As if interrupted) What's
that? ----"How about selling hens this time of the year?"

Of course, that depends on the hens. Live poultry brings the highest prices about Easter. It's a big temptation to sell some of the hens for market at this time; especially if the hens didn't lay well during the winter. Those which have not been laying are bound to lay freely during the next three months. They can't help paying a big return over the cost of their feed.

Don't let Easter prices tempt you to sell those which have laid all winter. They will probably keep up good production this spring. I wouldn't market any of those good winter layers. By July or August, you can cull out some of them and sell them profitably. The price you get will be only 3 or 4 cents less a pound than you would get by selling now, and in the meantime they would be producing eggs at a profit.

Just because egg prices go down to the lowest point of the year during April and May doesn't mean you can't produce eggs at a profit at this time of the year. In fact, on most farms eggs pay more over and above feed cost during the next three months than any other time of the year.

Of course, it is very important that you give the hens plenty of feed. They should be laying heavily now, and need a lot of feed-----(As if interrupted) Yes? ---- Did you have a question? ----- "What would I feed them?"

Well, if you have been feeding your hens a good laying ration all winter, you don't have to change either the mash or the scratch feed.

That is, you can feed the same mash and same scratch feeds you've been using. You should, however, change the proportion of mash to scratch. Feed more mash and less scratch.

I'm assuming you have been feeding your hens equal parts of mash and scratch feed. Now's the time to change so that you feed them about one-fourth more mash than scratch. And you can keep on gradually increasing the amount of mash during the spring and summer. By the time they commence to molt, you should be feeding them nearly two parts mash to one part scratch.

And be sure you provide plenty of dry-mash hopper space; so the hens won't crowd each other getting at the mash -----(As if interrupted) "How much?"

Well, there should be about a foot of hopper length for each eight hens in the flock. And remember, hens will not eat dry mash freely unless they have plenty of water. An egg is over 73 per cent water, you know. See to it, too, that the water is clean water. Don't let them drink anything else. When they are laying heavily, they also eat a lot of oyster shell or limestone grit, so keep the boxes well filled.

Those of you who planned ahead last fall now have a field of green rye or wheat. That will give you the best possible early green feed for your hens.

Green feed is usually scarce at this season of the year as the cabbages or other fresh green feed stored last fall are probably all gone now. In place of green feed, you might use alfalfa leaf meal or a good grade of alfalfa or

clover hay. Some folks have also had good results from using soy-bean hay. If there's no other succulent feed to be had, you can always provide sprouted oats.

Feeding is an important thing. I keep one of those Farmers' Bulletin No. 1541-F handy. It is called "Feeding Chickens" and it is packed full of up-to-date information on the subject.

Then, too, it would be a good idea to get that Farmers' Bulletin No. 1524-F on "Poultry Management." They will help you with your spring management of the laying stock.

ANNOUNCEMENT: You can get those bulletins free of charge from either Station----- or direct from the United States Department of Agriculture at Washington, D.C. If you want the one on "Feeding Chickens" ask for Farmers' Bulletin No. 1541-F on "Feeding Chickens" If you also want the one on "Poultry Management" ask for Farmers' Bulletin No. 1524-F on "Poultry Management."

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★ MAR 25 1929 ★

U. S. Department of Agriculture

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In 3 Fa
THE FARM FORUM

Wednesday, March 27, 1929

Crops and Soils Meeting No. 26:

Time to Cut Alfalfa

ANNOUNCEMENT: Order in the Farm Forum! --- We've had several disputes here about the best time to cut alfalfa. Some say cut it early, others claim it is best not to cut it until it is in full bloom. Both sides seem to have good arguments. That's the reason I asked this alfalfa specialist from the U.S. Department of Agriculture to come here and tell us, just what is the best time to cut alfalfa? -----How about it, Mr. Expert? -----

Everything considered, the best time to cut alfalfa is when it is about one-fourth to one-half in bloom. Yes, when it is one-fourth to one-half in bloom.

--- (As if interrupted) Beg pardon! -- Did you want to ask a question? ----- Yes, that's right

It is true, as this gentleman says, you get the best yields of hay when the alfalfa is cut when it is in full bloom.

At one time, we thought that cutting the shoots at the base would cut down the yield of the next crop. Now we know that's usually not the case. In several cases cutting has been delayed until seed pods formed, and stands were maintained in spite of the fact that the basal shoots were cut off. Yes, as he says, you get the biggest yields of hay by cutting at full bloom.

But remember, hay cut at that late stage is coarse and woody. It has low feeding value compared to earlier cut hay. Hay cut at full bloom is not as tasty or as high value for feed as that cut in the bud stage ---- Just a moment, I know, I said cut alfalfa when it is one-fourth to one-half in bloom, everything considered.

Of course, there are a number of things you have to figure in. You have to consider how mowing the alfalfa fits in with other farm work, for instance. Then there is the weather. And, of course, the length of time you want to keep up the stand should be considered in deciding when to cut. Also the kind of stock for which the hay is intended.

The best quality of hay for feeding dairy cattle is made from alfalfa cut in the bud. Horses, on the other hand, generally do better when fed hay that was cut in the full bloom stage. ----- (As if interrupted) What's that ---- "If you are feeding dairy cattle, why not cut early, then?"

An experiment carried on by the Kansas Agricultural Experiment Station at Manhattan, Kansas, throws some light on that. It was found in that experiment that cutting in the bud stage lowered the vigor of the

plants and shortened the life of the stand. Cutting too early brought on lower yields of hay and let in the weeds. In two years that showed up clearly.

Cutting when the alfalfa was about one-tenth in bloom also brought lower yields, and shorter life, and less vigor. But the effects were not noticeable so soon. On the other hand, cutting at the full bloom stage resulted in the biggest total yields, most vigorous growth and well maintained stands. --- (As if interrupted) What's that --- If you have something to say, just speak right up ----- What? --- "Experiment stations don't agree".

That's true. Some tests have shown bigger yields from cutting early and lower yields from delayed cutting. In the majority of cases, however, as I just pointed out, better yields have resulted from cutting made when the plants were well advanced in bloom than at earlier stages.

The reason some of the tests do not agree with that is partly because they represent one or two seasons' work. That's not long enough to show the real effect of continued premature cutting on the life of the stand. Then too, the soil and the climate at the time the cutting tests were made probably account for some of the differences between tests.

In some sections, where natural conditions are hard on alfalfa, any unusual practice may upset the plant. One or two cuttings made prematurely have been known to affect the alfalfa so much that it never fully recovered.

On the other hand, in irrigated districts, that are naturally well suited to alfalfa, premature cutting was practiced for years without any very apparent bad effect. That seems to have been especially true in the case of new lands. Now, however, that alfalfa has been grown several years in most of those districts, the time of cutting is pretty generally recognized as having some effect on the life of the stand.

Yes, you can put it down as pretty well proved that the old idea that cutting often and early makes for more hay is all wrong. Too early cutting means reducing the stand and replacing alfalfa with weeds. Cutting late doesn't usually hurt the stands, but it does result in loss of leaves and in hay of lower feed value and poorer quality.

In order to get the highest possible feed value without sacrificing too much in the way of total yield, and without shortening the life of the stand, the safest thing to do is to take a middle course. That is, make it a regular practice to cut your alfalfa when it is about one-fourth to one-half in bloom. ---- (As if interrupted) What? ---- "Suppose it doesn't bloom?"

Yes, that may be the case. It is often hard to judge the stage of growth by the bloom in wet seasons in the eastern United States. Alfalfa blooms very sparingly under such conditions. And you get somewhat the

same situation in very dry spells. That being the case, you have to guide your cutting by something besides the bloom.

When you see the alfalfa is not going to bloom, watch the basal shoots. Cut the alfalfa when the basal shoots are well developed.

Everything considered, no farmer can afford to keep cutting his alfalfa earlier than one-tenth bloom stage if he hopes to keep up a stand. On the other hand, the difference in yields in favor of full bloom cutting is not enough to justify putting off the cutting, especially when you figure in the lower value of the later hay.

Yes, you can put it down that the best time for cutting alfalfa is when it is about one-fourth to one-half in bloom.

Results so far suggest, however, that it may be feasible to cut the first crop early; that is, when about one-tenth in bloom, and the other crops one-fourth to one-half in bloom. Early cutting of the first crop would give finer quality hay when it is otherwise likely to be coarsest. However, there are other phases of alfalfa growing that we haven't touched on. Many of you might find it an advantage to have that Farmers Bulletin No. 1283-F on "How to Grow Alfalfa."

ANNOUNCEMENT: "How to Grow Alfalfa" is Farmers' Bulletin No. 1283-F. You can get it free of charge by writing either to Station_____ or by writing direct to the United States Department of Agriculture at Washington, D. C.

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THE FARM FORUM

Friday, March 29, 1929 U. S. Department of Agriculture

Economics Meeting No. 26: Co-op Pooling.

ANNOUNCEMENT: The Farm Forum will be in order! -- We all realize these days that marketing is an increasingly important part of farming. For that reason, we have asked this market expert from the U. S. Department of Agriculture to talk to us about pooling as practiced by cooperative marketing associations -----All right, Mr. Specialist.

Some time back, an association of almond growers had a hard nut to crack.

They found they were getting considerable quantities of nuts which were a little off in size and looks-----

The nuts were perfectly good, you understand; but the buyers didn't like them. They tended to pull down the price on the better grade nuts.---

Now, what did that association do about it? --- Why, they shelled those off-grade nuts. They marketed them as salted nuts. They turned out a new product. And soon they built up a good demand for it. -----

Could an individual grower have done that? ---- Not and make anything on it. - That's the way it is, the average farmer doesn't have enough of any crop at any one time to take advantage of the most economical ways of getting his product to market. Naturally, assembling and grading and preparing for market in small lots, by a number of individuals, at a local point, is more expensive than where the small lots can be combined and handled under a common administration.

Not only that, but, as in the case of those almond growers, an association handling large quantities has a chance to prevent waste by using off-grade products or by developing by-products.

Then in marketing farm products there are a lot of risks. Nobody need tell you that prices change, that produce sometimes goes bad, or that there are other chances of losing money. Fruit and vegetable prices are especially liable to big changes on short notice.

Some of you may have been caught that way last year on potatoes. You may have shipped under what looked to be favorable conditions. Yet when your potatoes reached market, the market was glutted with potatoes. There was no way out of it. You had to stand the loss. However, the pooling feature in a cooperative association makes it easy to spread marketing risks out among the members.

The aim of pooling, you know, is to distribute the results of working together to all members fairly and equitably.

Few farmers can afford to develop a bigger market for what they grow, because of the expense and because they don't have enough to keep up a constant supply. A number of growers pooling their expenses, risks, and other things involved, can go in for a program of expansion to widen their market which they never could undertake individually.

Fact is, even small cooperative associations often have to combine to sell their products effectively. In Minnesota and Wisconsin, 450 cooperative creameries went in together to sell their butter. By advice and supervision they were able to get the butter of the different member creameries more nearly alike. They established a brand and advertised it. They found new markets. As a result, dairy farmers in that section have increased the quality of their products and also obtained more for what they produce.

Yes, by pooling their stuff for marketing under the control of efficient management, farmers can market and distribute effectively.
-----(As if interrupted) What's that? -- "Can get better prices?"

Yes, of course. Naturally, the bargaining position of the individual farmer is improved very much when he organizes himself into control of the products of hundreds or thousands of farms. The big milk bargaining associations prove that. Some of those associations market the milk of thousands of dairy farmers, and market it to advantage, without owning or operating any handling facilities whatever.

Yes, pooling improves the bargaining position of the individual farmer. It cuts down waste. It spreads the marketing risks among all members. And it makes possible going after wider markets.

However, in applying the pooling practice, questions do come up. Problems arise. The way those problems are solved may determine the success or failure of the association.

For instance, sales returns must be pooled on the basis of quality. That is so the producer of high-quality stuff may be properly rewarded for his special effort. Unless the association pools on the basis of quality, the individual farmer will have little incentive for producing high quality stuff.

Another thing that's important in pooling is the length of the pooling period. Many farmers just can't wait until the end of a long pooling period to get their complete returns. Then too, some farmers want to have some say-so as to when their stuff shall be sold.

The cooperative cotton marketing associations have met that problem by allowing short-time pooling. One-day pools have proved popular with cotton farmers.

The nature of the product and the time of maturity, usually limit the area which should be included in the same pool. With other farm commodities, however, the best limits are not so easy to decide. For instance, the milk shed of a city market may be very big. It may include dairy farms where conditions are very different as far as distance to market and transportation costs are concerned. Unless the cooperative association recognizes those differences, it may find members dropping out in certain sections.

Those are the kind of things farmers are thinking about in the pooling practices of their cooperative marketing associations these days. They not only consider the whys and wherefores of pooling, but they are paying more attention to the hows; to what we call the technique of pooling. As a result, there has been a big improvement in pooling practice in the last ten years. There will probably be much more improvement in the next ten years:

ANNOUNCEMENT: At next Monday's Farm Forum meeting, we'll take up the question of forage crops for pork production. Tuesday, we'll have some more to say about cooperative marketing. This time, it will be marketing poultry and eggs. Wednesday we will get a few hints on how to fight peach yellows. Thursday, we'll see what can be done to keep those weed flavors out of the milk.

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THE FARM FORUM

(Region 3)

Wednesday, March 29, 1929

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NOT FOR PUBLICATION

Crops and Soils Meeting No. 25b Survival of Near-by Produce.

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ANNOUNCEMENT: The Farm Forum will be in order! --- Members will please find seats! ---- so those of us who grow garden truck for market can find out where we stand. Today a specialist from the U.S. Department of Agriculture is here to tell us what is going to become of the truck farmers who live near market in face of the competition from long-distance shipments ----- Mr. Specialist, some of us have had some hot arguments on this subject. What are the prospects?

In one form or another, I've been asked this question a thousand times: "Can the nearby grower of fresh fruits and vegetables stay in the game? Can he stay in the game if wants to in spite of the competition from the big far-distant growers?"

That is not exactly a new question. I could have answered it some fifteen years ago; but I would probably have answered it differently from the way I am going to answer it today.

The use of refrigerator cars long ago made it possible for the far away truck farmer to compete with farmers who haul their own truck to the big city markets. New truck sections were opened up. Under irrigation, "the desert flourished and blossomed as a rose." The new areas had the advantage of cheap labor and relatively cheap land. If the land wasn't cheap it was because it was enormously fertile. In the early days of their cultivation, such desert lands were free from weeds which vegetable growers in rainfall country have to fight.

Then came the development of dry lands in the Rocky Mountains further north.

With that development, we had the possibility of more competition, with truck crops from a distance.

You all probably remember --- Some fifteen years ago, it was freely predicted, not only by enthusiastic promoters of irrigation schemes, but also by many economists, that near-by truck gardeners were doomed. It was

predicted that even the perishable food supplies of big cities were destined to be brought from greater and greater distances. Nearby supplies would dwindle, they told us. They would dwindle not only in relative importance, but in absolute quantity.

That did happen; but only with a few products. The trouble with that prediction was, that it didn't allow for the development of good roads and auto trucks.

Generally speaking, improved roads and auto trucks have extended the city truck garden sections from close to the city to all of the land within, say, fifty miles. Of course, auto trucks carry garden truck further than that. But those which haul big quantities more than fifty miles are usually just taking business which used to be handled by the railroads.

The truck has increased competition among local growers, it is true. It has increased the numbers of local growers. And it has made available all the land suitable for trucking within a much larger area. But by making it possible to use the very best adapted land even at a distance from the city for the local supply, the truck and hard-surfaced road have helped the local producer compete with the far distant shipper. --- (As if interrupted) What's that? --- "Won't the far-distant farmer force him out in the long run?"

No. The man who lives near the consumer has several advantages. Those advantages are not likely to be taken from him.

First, his cost of delivery is lower. His truck moves the produce directly from his field to the buyer's door. The distant producer, on the other hand, must truck from the field to the station, then stand freight and icing charges, and often trucking charges in the final market, with the danger of rough handling at each step.

The nearby producer also saves in packages. Of course, his stuff which goes into cold storage, like barreled apples, will need the same packages as those grown at a distance. But there are a great many things, such as bunched vegetables, which are marketed in open containers or without any package.

And, up to this time, at least, the local grower enjoys another advantage. His products do not need such close grading as is necessary with products from a distance. When goods are marketed in open packages or without packages, they are easily inspected. If they are sound and fresh, the average buyer does not seem to be so particular about uniform sizing as he is when buying goods from a distance in closed packages.

The local grower can also sell small sizes, at low prices, and get something for his work. If those same goods were shipped, say, one thousand miles, they would not pay the freight and handling charges. That's as true of fruits as of vegetables.

Windfall fruits can often be sold in nearby markets. But they can not be packed and shipped long distances. That one item may mean the difference between profit and loss on an orchard for the year.

The local grower can harvest his produce at just the right stage of ripeness. The distant shipper, however, must often pick his fruits before they reach their best. That makes it possible for local growers to specialize in varieties of first-rate table quality which won't stand long shipment.

Why, even the weather is not so important to the near-market farmer. If it is too wet to gather the crop today, or even this week, he can usually gather it tomorrow or next week. If it is a little riper than he wants it, he can still sell it. Under the same conditions, the farmer one thousand miles away would lose his crop. He could not get the ripe stuff to market before it became unsalable.

Then the nearby producer usually depends upon local labor. He is reasonably sure of getting extra hands when he needs them. Much of the distance produce is planted or harvested by itinerant or migratory labor. That is much more uncertain, both in quantity and quality, than local labor.

So you see, in spite of competition from a distance, the nearby producer seems certain to survive. In fact, I'd say, there is reason to believe, that his position may get better instead of worse.

ANNOUNCEMENT: At tomorrow's meeting of the Farm Forum we'll talk about making butter on the farm. And Friday we'll have the Farm Engineer to show us how to get the most out of the tractor. Then next week we'll have an important meeting to discuss livestock troubles on Monday and another on Tuesday to take up the spring management of laying hens.

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